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NATIONAL MARINE FISHERIES SERVICE

GRANT-IN-AID FOR FISHERIES Program Activities

1982

U.S. DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Front cover: Shrimp Dragger - Courtesy Maine
Department of Marine Resources

U.S. DEPARTMENT OF COMMERCE

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GRANT-IN-AID FOR FISHERIES PROGRAM ACTIVITIES
1982

Prepared by
Grant-in-Aid Staff
Office of Fisheries Management
Ann D. Terbush, Editor

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AUTHORIZATION

This report is submitted in compliance with the requirement of Section 9(a) of the Fish and Wildlife Act of 1956, as amended, 16 U.S.C. 742d(7) and Section 2 of the Anadromous Fish Conservation Act of 1965, as amended, 16 U.S.C. 757b.

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GRANT-IN-AID FOR FISHERIES

PROGRAM ACTIVITIES 1982

by

Grant-in-Aid Staff

INTRODUCTION

This is the 15th in a series of annual publications on program activities under the Grant-in-Aid for Fisheries Program of the Office of Fisheries Management, National Marine Fisheries Service (NMFS).

Information presented in this report provides State program coordinators and administrators, Federal personnel, project personnel, and others concerned with research, development, conservation, and management of our fishery resources with a convenient reference to the grant-in-aid program. This publication will also facilitate planning, coordination, and integration of State, Federal, and private sector activities concerned with the fishery resources.

THE ACTS

The NMFS Grant-in-Aid Program is authorized under two Acts:

1. The Commercial Fisheries Research and Development Act of 1964 (Public Law 88-309 as amended) - Authorizes the Secretary of Commerce to cooperate with the 50 States, the Commonwealths of Puerto Rico and the Northern Mariana Islands, and the Governments of the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands, in carrying out research and development of the Nation's commercial fisheries. Projects eligible for funding include research, development, construction, and coordination. Cost-sharing projects under subsection 4(a) are funded up to the 75 percent level of Federal participation, whereas projects under subsection 4(b), to alleviate resource disasters, may be financed 100 percent with Federal funds. This Act would have expired June 1973; however, it was extended by Public Laws 92-590, 95-53, 96-62 and 97-389 for an additional 12 years, or to September 30, 1985. The authorized levels are $5 million for subsection 4(a), and $2.5 million for subsection 4(b).

2. The Anadromous Fish Conservation Act of 1965 (Public Law 89-304, as amended) - Authorizes the Secretary of Commerce and the Secretary of Interior to enter into cooperative agreements with States and other non-Federal interests for the conservation, development, and enhancement of the anadromous fishery resources of the Nation and the fish in the Great Lakes and Lake Champlain that ascend streams to spawn, and for the control of the sea lamprey. The program is administered at the Federal level jointly by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. Federal funds up to 50 percent, 66 2/3 percent when two or more States cooperate, or 90% to carry out projects required by interstate fishery management plans, may be used to finance project costs. State fishery agencies, colleges, universities, private companies, and other non-Federal interests in 31 States bordering the oceans and the Great Lakes may participate under the Act. All projects must be coordinated with the State fishery agency concerned. The authorization for this Act was renewed in January, 1983 by Public Law 97-453. This Act set authorized levels at $7.5 million for fiscal years 1983, 1984, and 1985 for grants under Section 4, and reauthorized Section 7, the emergency research program to study striped bass populations and to identify factors responsible for the current decline, for fiscal years 1983 and 1984 at $1 million each year.

APPORTIONMENT OF FEDERAL FUNDS BY STATE AND AUTHORIZATION

Distribution of Federal funds to the States and others under the National Marine Fisheries Service grant-in-aid for fisheries program (Public Law 88-309 and Public Law 89-304) in Fiscal Year 1982, is given in the following tabulation:

State and Others	FY 1982 P.L 88-309	P.L 89-304
Alabama	$ 123,200	$ 76,650
Alaska	240,000	548,600
Arizona	20,000	
Arkansas	26,400	
California	240,000	395,000
Colorado	20,000	
Connecticut	20,000	28,600
Delaware	31,400	
Florida	240,000	
Georgia	65,400	13,000
Hawaii	36,600	
Idaho	20,000	
Illinois	20,000	
Indiana	20,000	
Iowa	20,000	
Kansas	20,000	
Kentucky	20,000	
Louisiana	240,000	
Maine	174,800	95,124
Maryland	125,000	75,000
Massachusetts	240,000	40,000
Michigan	20,000	48,000
Minnesota	20,000	
Mississippi	160,900	41,000
Missouri	20,000	
Montana	20,000	
Nebraska	20,000	
Nevada	20,000	
New Hampshire	39,600	70,000
New Jersey	109,900	
New Mexico	20,000	
New York	94,900	50,770
North Carolina	64,000	80,000
North Dakota	20,000	
Ohio	64,500	
Oklahoma	20,000	
Oregon	116,400	590,000
Pennsylvania	68,700	
Rhode Island	28,900	18,700
South Carolina	23,400	21,500
South Dakota	20,000	
Tennessee	20,000	
Texas	240,000	
Utah	20,000	
Vermont	20,000	
Virginia	135,800	74,006
Washington	139,400	573,050
West Virginia	20,000	
Wisconsin	20,000	35,000
Wyoming	20,000	
American Samoa	110,800	
Guam	20,000	
Puerto Rico	240,000	
Virgin Islands	20,000	
Trust Territory of the Pacific Islands	20,000	
Northern Mariana Islands	20,000	
Pacific Marine Fisheries Commission	-	58,000
NW. Indian Tribes	-	73,000
TOTAL	$4,000,000	$3,000,000*

*Excludes Emergency Striped Bass Study Projects

CLASSIFICATION OF FEDERAL AND STATE FUNDS
BY ACTIVITY AND AUTHORIZATION

FISCAL YEAR 1982

Program activities cover various fields, including broad categories of research and development of commercial fisheries and conservation, development and enhancement of anadromous fishery resources. Seventy-eight percent of the funds were used for research in such areas as the environment, freshwater finfish, marine finfish, and shellfish; 5 percent for collection of statistics; 5 percent for construction; and less than 5 percent for each of the other program activities. Funding figures shown include both State and Federal dollars for all 1982 project segments.

Activity	Public Laws		Total	
	88-309 ($1,000)	89-304 ($1,000)	Dollars ($1,000)	Percent (Total)
Aquaculture	400	-	400	2.8
Construction	42	714	756	5.2
Fish screens and stream improvement facilities	-	117	117	
Hatcheries and hatchery facilities	-	597	597	
Laboratories	4	-	4	
Vessel	38	-	38	
Coordination	163	-	163	1.1
Disease and parasite control	144	267	411	2.9
Extension service	526	-	526	3.7
Market development	-	-	-	
Operation and maintenance	69	140	209	1.5
Planning	40	-	40	.3
Research	4,109	6,955	11,064	77.0
Environment	23	-	23	
Finfish (Freshwater)	382	166	548	
Finfish (Marine or Anadromous)	2,059	6,789	8,848	
Shellfish	1,645	-	1,645	
Statistics	792	-	792	5.5
TOTAL	6,285	8,076	14,361	100.0

PROJECT TITLES BY STATE AND PUBLIC LAW

WITH OTHER PERTINENT INFORMATION

FISCAL YEAR 1982

All 50 states, the Commonwealths of Puerto Rico and the Northern Mariana Islands, the Governments of American Samoa, Guam, the Virgin Islands, and the Trust Territory of the Pacific Islands, and certain Northwest Indian tribes are participating in the program under one or both authorizations. In FY 1982, 70 projects were completed at an estimated total cost (State and Federal dollars combined) of $12,674,000; 140 projects were initiated or are continuing at an estimated cost of $44,596,000. The average Federal share of the Public Law 88-309 projects is 67 percent; the average Federal share of the Public Law 89-304 projects is 53 percent.

Tabulation of completed and continuing projects including total cost follows:

	Completed Projects		Continued Projects		Total Projects	
Public Law	Number	Total Cost	Number	Total Cost	Number	Total Cost
		$1,000		$1,000		$1,000
88-309	55	8,405	89	21,398	144	29,803
89-304	15	4,269	51	23,198	66	27,467
TOTAL	70	12,674	140	44,596	210	57,270

A list of continuing projects and those completed in 1982, under each authorization by State, including duration, date completed, and page reference for project narrative, is tabulated on pages 5 through 17. Under Public Law 88-309, project numbers identify the Region administering the project by the first digit, project number sequence within the Region by next digit(s), followed by a letter to denote activity as R-research, C-construction, D-development, and S-coordination. Under Public Law 89-304, the first two letters, "AF" identify the project as anadromous fish, with next letter "C" for projects administered by NMFS, or jointly funded projects with U.S. Fish and Wildlife Service (FWS) with NMFS as lead agency, and "SC" for jointly funded projects with FWS as lead agency, followed by a number sequence within each State.

Public Law	Project number	Project title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	ALABAMA						
88-309	2-380-R.	Research and management of Alabama coastal fisheries	1982	1	F-123,200 S- 41,067		30
89-304	AFCS-12.	Striped bass production and stocking experiments in Alabama coastal areas (Study No. 2)	1979	3	F-205,000 S-205,000 (Includes FWS share)		28
	AFC-13.	Increasing yield of striped bass fingerlings through intensive culturing methods	1979	3	F- 54,600 S- 54,600		28
	ALASKA						
88-309	5-49-R.	Gulf of Alaska - Bering Sea groundfish investigations	1981	3	F- 226,600 S- 178,600		26
	5-50-R.	Stock assessment of Pacific herring, Bristol Bay, Alaska	1982	5	F-600,000 S-202,500		26
	5-51-R.	Pacific herring research - S.E. Alaska	1982	5	F-300,000 S-100,000		26
89-304	AFC-59.	Pink salmon stock predictions - S.E. Alaska	1977	5	F-470,000 S-909,000	1982	26
	AFC-60.	Sockeye stock assessment and evaluation - S.E. Alaska	1977	5	F-227,200 S-340,000	1982	26
	AFC-65.	Chignik sockeye studies	1981	3	F- 84,100 S-108,600		26
	AFC-66.	Origin of chinook salmon in the S.E. Alaska troll fishery	1981	1	F- 80,000 S- 80,000	1982	26
	AFC-67.	Microwire tagging of wild coho salmon stocks	1981	5	F-717,500 S-500,000		26
	AFC-68.	Copper River - Bering River sockeye salmon stock separation	1981	1	F-40,000 S-50,000	1982	26
	AFC-69.	Bristol Bay salmon run forecast	1981	1	F- 90,000 S-167,800	1982	26
	AFC-70.	Southeastern Alaska sockeye salmon stock apportionment studies	1982	5	F-350,000 S-361,500		27
	AFC-71.	Southeastern Alaska pink and chum studies	1982	5	F-839,500 S-562,700		27
	AFC-72.	Southeastern Alaska port sampling	1982	5	F- 529,000 S-1,300,000		27

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AMERICAN SAMOA						
88-309	4-46-D.	Fisheries technical assistance	1979	3	F-249,000 S- 0		21
	4-47-D.	Statistical analysis of American Samoa fisheries	1979	2	F- 58,900 S- 0	1982	34
	ARIZONA						
88-309	4-49-R.	Fish disease control station diagnostic laboratory	1980	2	F- 29,595 S- 9,865	1982	19
	4-56-D	Distribution and relative abundance of freshwater clams	1982	2	F- 54,255 S- 18,085		31
	ARKANSAS						
88-309	2-371-R.	Commercial fishery survey	1980	3	F-165,348 S- 55,116		23
	CALIFORNIA						
88-309	4-48-R.	Morphophysiological fertilization study of white and green sturgeon	1980	2	F- 19,000 S- 6,334	1982	18
	4-50-S.	Program coordination	1981	1	F- 17,306 S- 5,769	1982	20
	4-51-R.	Shellfish culture investigations	1981	1	F-122,048 S- 40,683	1982	18
	4-52-D.	Fisheries monitoring, assessment and evaluation	1981	1	F-152,374 S- 50,791	1982	30
	4-53-D.	Demersal nearshore commercial invertebrate evaluation	1981	1	F- 92,718 S- 30,906	1982	33
	4-59-D.	Fisheries monitoring and assessment program	1982	3	F-340,035 S-113,346		30
89-304	AFC-16.	Salmon and steelhead research, management and enhancement	1981	2	F-772,305 S-772,305		27
	COLORADO						
88-309	1-133-R.	Intensification of commercial fish culture	1977	5	F- 92,147 S- 34,875	1982	18
	1-161-R.	Baitfishes of Colorado	1981	2	F- 5,469 S- 4,938		23
	CONNECTICUT						
88-309	3-278-R.	Commercial fishery monitoring program	1977	5	F-105,981 S- 35,326	1982	34
	3-374-R.	Connecticut lobster investigations	1982	5	F- 82,625 S- 82,625		31
89-304	AFS-4-R.	Connecticut River basin anadromous fish studies	1980	2	F- 92,000 S- 46,000 (includes FWS share)	1982	25

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFC-13.	Population dynamics of American shad in the Connecticut River	1981	4	F- 78,000 S- 78,000		25
	AFC-14.	Kensington Atlantic salmon hatchery modernization	1982	1	F- 21,600 S- 21,600		19
	DELAWARE						
88-309	3-280-D.	Technical assistance to commercial fisheries	1977	5	F-196,000 S- 65,333	1982	21
	3-358-D.	Technical assistance to commercial fisheries	1982	3	F-183,400 S- 61,134		21
	FLORIDA						
88-309	2-336-D.	Fisheries extension and marketing services program	1978	5	F-879,732 S-293,245		21
	2-341-R.	Florida's marine resources research, development, and management program	1978	5	F-635,200 S-211,733		30
	2-370-D.	Oyster cultivation by reef construction	1980	3	F- 92,125 S- 30,708		32
	GEORGIA						
88-309	2-319-R.	Studies and assessment of Georgia's fishery resources	1977	4	S-319,280 S-106,427		33
	2-379-R.	Studies and assessment of Georgia's marine fisheries resources	1981	1	F- 77,700 S- 25,900		33
89-304	AFC-18	Georgia commercial shad assessment	1980	2	F- 45,161 S- 45,161		25
	GUAM						
88-309	4-42-D.	Development of polyculture fish farming under tropical conditions	1978	3	F- 79,300 S- 77,609	1981	18
	4-58-D.	Development of polyculture fish farming	1982	3	F- 60,000 S-147,000		18
	HAWAII						
88-309	4-40-D.	Development of finfish aquaculture industry	1978	3	F- 90,000 S- 90,000	1981	18
	4-57-D.	Seaweed investigations	1982	3	F-135,000 S- 45,000		18
	IDAHO						
88-309	1-160-R.	Commercial fishery feasibility and development	1981	1	F- 22,124 S- 7,376		23
	ILLINOIS						
88-309	3-327-R.	Effects of three commercial harvesting methods on mussel beds	1979	4	F- 85,865 S- 29,419		32

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	3-373-R.	Effects of fleeting areas on mussel beds	1982	1	F- 9,962 S- 3,321		32
	INDIANA						
88-309	3-336-R.	Movements of yellow perch in Indiana waters of Lake Michigan	1980	3	F- 75,000 S- 74,728		23
	IOWA						
	2-384-R.	Habitat associations and movements of shovelnose sturgeon with reference to spawning	1982	1	F- 20,000 S- 6,667		23
	KANSAS						
88-309	2-340-R.	Marketable fisheries investigations	1978	3	F- 87,172 S- 29,057	1982	24
	2-389-R.	Kansas commercial fisheries statistics	1982	1	F- 20,000 S- 6,667		34
	KENTUCKY						
	2-368-R.	Commercial fishery evaluation	1980	2	F- 8,158 S- 2,719	1982	24
	2-388-R.	Population dynamics and biology of the paddlefish Polydon spathula in Lake Cumberland, KY	1982	2	F- 45,000 S- 15,000		24
	LOUISIANA						
88-309	2-343-R.	An evaluation of gill nets of various mesh sizes	1979	2	F-147,807 S- 49,269	1982	30
	2-353-D.	Permanent monument for oyster lease surveying	1979	4	F-347,600 S-115,867		32
	2-354-C.	Coordination and data processing for Louisiana's Federal aid program	1979	4	F- 73,500 S- 24,500	1982	20
	2-364-R.	A study of Gulf menhaden in Louisiana	1980	2	F- 89,540 S- 29,847	1982	30
	2-381-R.	Monitoring and assessment activities in Louisiana's coastal waters	1982	1	F-183,000 S- 61,000		33
	MAINE						
88-309	3-300-R.	Lobster stock assessment	1978	4	F-254,420 S-254,420	1982	32
	3-304-D.	Market and economic development	1979	3	F-120,000 S-120,000	1982	22
	3-305-D.	Marine resources fisheries extension	1979	4	F- 94,138 S- 94,138	1982	21
	3-315-S.	Coordination of research and development	1979	3	F-203,037 S- 67,679	1982	20

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	3-329-D.	Operation and maintenance of marine laboratory, West Boothbay Harbor	1979	3	F- 43,700 S- 43,700	1982	22
	3-359-S.	Coordination of research and development	1982	3	F-135,146 S- 45,049		20
	3-368-D.	Fisheries technology service	1982	3	F-104,887 S-104,887		21
	3-370-R.	Lobster stock assessment	1982	3	F-258,026 S-258,026		32
89-304	AFC-20.	American shad enhancement and status of sturgeon stocks in Maine waters	1979	3	F- 81,673 S- 81,673	1982	25
	AFC-21.	Population biology and management of the alewife (Alosa pseudoharengus) in Maine	1979	4	F- 82,740 S- 82,740		25
	AFC-23.	Kennebec River anadromous stock evaluation	1982	3	F- 34,100 S- 34,100		25
	AFC-24.	Androscoggin River shad restoration, Maine	1982	3	F-181,024 S-181,024		25
	MARYLAND						
88-309	3-310-R.	Marine animal disease investigations	1979	3	F-125,327 S- 94,012	1982	20
	3-326-D.	Maryland fisheries extension	1979	3	F-132,561 S- 44,187	1982	21
	3-345-D.	Maryland fisheries statistics	1980	5	F-554,217 S-554,217		34
	3-365-D.	Fisheries technology and advisory services	1982	3	F-143,775 S- 47,925		21
	3-366-D.	Fish environmental assessment	1982	3	F-180,431 S- 60,144		20
89-304	AFC-10.	Survey and inventory of anadromous fish spawning areas	1980	3	F-204,900 S-204,900		30
	AFC-11.	Striped bass research, Maryland (Emergency Striped Bass Research Study)	1980	3	F-226,615 S-114,036		28
	AFC-13.	Striped bass fishery enhancement investigations	1982	1	F- 24,696 S- 24,696		28
	MASSACHUSETTS						
88-309	3-194-D.	Collection, compilation, evaluation, and dissemination of commercial fisheries statistics	1973	9	F-376,807 S-127,787	1982	34
	3-218-C.	Construction of marine research station	1974	10	F-250,000 S-250,000		19
	3-287-R.	Coastwide fishery resource assessment	1978	5	F-507,750 S-169,250		30

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	3-294-D.	Commercial fisheries extension service	1978	4	F-327,193 S-158,978	1982	21
	3-303-D.	Massachusetts fisheries marketing program	1978	4	F-285,000 S- 95,000	1982	22
	3-363-D.	Commercial fisheries development program	1982	3	F-275,764 S- 91,921		21
	3-371-D.	Collection, compilation, evaluation, and dissemination of Massachusetts fishery statistics	1982	3	F-232,832 S-155,221		34
89-304	AFS-4-R.	Connecticut River basin anadromous fish studies	1980	2	F-185,800 S- 92,900 (includes FWS share)	1982	25
	AFC-18.	Characterization of Massachusetts striped bass landings	1981	3	F- 36,466 S- 18,234		29
	AFC-19.	Anadromous fisheries management	1981	5	F-349,600 S-349,600		19
	MICHIGAN						
88-309	3-349-R.	Lake Michigan lake trout study	1981	1	F- 74,300 S- 24,800	1982	23
89-304	AFC-14.	Lake Erie walleye assessment	1980	3	F-147,122 S-147,122		23
	MINNESOTA						
88-309	3-316-R.	Leech culture study	1979	3	F- 35,700 S- 35,700	1982	18
	3-344-R.	Lake Superior commercial fisheries assessment studies	1981	4	F- 51,300 S- 17,100		24
	MISSISSIPPI						
88-309	2-296-R.	Fishery monitoring and assessment	1977	4	F-381,569 S-127,189	1982	30
	2-325-R.	Commercial fishes of Mississippi: spawning and miscellaneous biological parameters	1978	3	F-158,070 S- 53,692	1982	30
	2-327-R.	Selection of improved commercial traits in channel catfish	1978	4	F-33,000 S-11,000	1982	18
	2-376-R	Experimental treatment of catfish ponds with algal inhibitors	1981	3	F-129,422 S- 43,141		18
	2-382-R.	Monitoring and assessment-Mississippi coastal fisheries	1982	1	F-133,278 S- 44,426		33
89-304	AFCS-7	Striped bass restoration program-Mississippi Gulf Coast	1979	4	F-161,000 S-161,000 (includes FWS share)		29

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	MISSOURI						
88-309	2-363-R.	Research and management of Missouri's commercial fisheries resources	1979	5	F-124,875 S- 41,625		34
	MONTANA						
88-309	1-162-R.	Development and management of commercial fishing practices	1982	1	F- 20,000 S- 5,000		24
	NEBRASKA						
88-309	2-359-R.	Population estimates of Missouri River fishes	1979	5	F- 82,575 S- 27,525		35
	2-360-R.	Inland commercial fisheries investigations	1979	5	F- 51,825 S- 17,275		35
	NEVADA						
88-309	4-41-D.	Rearing baitfish in western Nevada	1978	4	F- 68,282 S- 22,761	1982	18
	4-60-R.	Production of sterile grass carp	1982	1	F- 16,794 S- 5,598		18
	NEW HAMPSHIRE						
88-309	3-343-D.	Statistical data acquisition for the marine fisheries of New Hampshire	1980	3	F- 77,250 S- 25,750		35
	3-350-R.	An investigation of commercially important fisheries in New Hampshire coastal and estuarine waters	1981	1	F- 28,875 S- 9,625	1982	30
	3-351-R.	A comprehensive marine resources strategy	1981	2	F- 59,821 S- 19,940		22
89-304	AFC-5	Operation and maintenance of the Milford hatchery	1980	3	F-240,000 S-240,000		22
	NEW JERSEY						
88-309	3-319-R.	Effects of MSX disease on oyster production in Delaware Bay	1979	3	F- 72,000 S- 24,000	1982	20
	3-332-R.	Inventory of New Jersey's estuarine shellfish resource	1979	5	F-192,072 S-192,072		33
	3-340-D.	Marine fisherman's coordination project	1980	4	F-112,500 S- 37,500		21
	3-342-R.	Monitoring environmental quality of previously studied estuarine systems	1980	2	F- 57,075 S- 19,025	1982	22
	3-353-D.	Commercial fisheries data collection	1981	1	F- 15,000 S- 5,000	1982	35
	3-354-D.	Management of commercial fishery for blue crabs	1981	1	F- 10,125 S- 3,375	1982	31
	3-364-R.	MSX disease and oyster production in Delaware Bay	1982	3	F- 72,000 S- 24,000		20

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	3-367-R.	Life history investigations of marine fisheries	1982	3	F- 71,888 S- 26,962		30
89-304	AFC-4.	Monitoring of the status of the striped bass population in New Jersey II (Emergency Striped Bass Research Study)	1981	1	F- 76,000 S- 38,000	1982	29
	AFC-5.	Monitoring of the status of striped bass population in New Jersey (Emergency Striped Bass Research Study)	1982	1	F- 34,000 S- 17,000		29
	NEW MEXICO						
88-309	2-366-R.	Intensive harvest of commercial species	1980	4	F- 90,000 S- 30,000		24
	NEW YORK						
88-309	3-307-D.	Shellfish transplant in the marine district of New York State #3	1979	3	F-156,000 S-156,000	1982	33
	3-308-D.	Operation of mobile laboratories for shellfish sanitation control #2	1979	3	F- 87,650 S- 87,650	1982	33
	3-309-R.	Assessment of New York's shellfish resources	1979	3	F- 94,700 S-100,850	1982	33
	3-333-R.	Movement, mortality rates and growth of American lobster	1980	2	F- 38,750 S- 38,750	1982	32
	3-346-S.	Coordination III	1981	3	F- 60,200 S- 68,800		20
	3-347-C.	Marine research vessel acquisition	1981	2	F- 44,000 S- 44,000		19
	3-355-D.	Shellfish resource promotion	1982	3	F-156,000 S-156,000		34
	3-356-R.	Assessment of New York's shellfish resources II	1982	3	F-169,750 S-169,750		34
	3-357-R.	Investigation of the American lobster in eastern Long Island Sound	1982	2	F- 16,465 S- 16,465		32
	3-360-D.	Shellfish sanitation control utilizing mobile laboratories III	1982	3	F- 65,570 S- 65,570		34
89-304	AFC-10.	A study of the striped bass in the marine district of New York State #3	1979	3	F-113,900 S-113,900	1982	29
	AFC-11.	Biology and management of striped bass in New York waters (Emergency Striped Bass Research Study)	1980	3	F-229,357 S-114,685		29

Public Law	Project number	Project title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFC-12.	A study of the striped bass in the marine district of New York IV	1982	3	F-176,340 S-176,340		29
	NORTH CAROLINA						
88-309	2-386-R.	Assessment of North Carolina commercial finfisheries: Project I	1982	3	F-224,000 S- 74,667		31
89-304	AFCS-16.	North Carolina anadromous fisheries management program	1979	3	F-362,650 S-362,650 (Includes FWS share)		31
	AFC-17.	River herring spawning and water quality in the Chowan River	1980	3	F- 37,500 S- 37,500		25
	AFC-18.	An investigation of size, age and sex of North Carolina striped bass (Emergency Striped Bass Research Study)	1980	3	F- 79,334 S- 39,666		29
	AFC-19.	Roanoke River striped bass investigation	1982	2	F- 34,000 S- 34,000		29
	NORTH DAKOTA						
88-309	1-146-R.	The biology of Diplostomum spathaceum (eye flukes) and its relaitonship to fish of commercial value	1979	4	F- 30,000 S- 10,000		20
	1-147-R.	Jamestown reservoir commercial fishery investigations	1979	2	F- 19,875 S- 6,625	1982	23
	NORTHERN MARIANAS						
88-309	4-61-D.	Fisheries data collection program	1982	1	F- 42,000 S- 6,500		35
	OHIO						
88-309	3-298-R.	Yellow perch parasite research	1978	4	F- 73,925 S- 24,642	1982	20
	3-301-R.	Commercial fishing gear mortality	1978	5	F-171,765 S- 75,835		24
	OKLAHOMA						
88-309	2-383-R.	Commercial Statistics II	1982	1	F- 5,250 S- 1,750		35
	2-387-R.	Commercial lake monitoring study	1982	1	F- 14,750 S- 4,917		24
	OREGON						
88-309	1-151-R.	Groundfish and shrimp assessment	1979	3	F-443,956 S-147,984		31
88-304	AFC-98.	Infectious disease program for salmon and steelhead hatcheries	1980	3	F-133,498 S-133,498		20
89-304	AFC-99.	Management of the troll salmon fishery	1980	3	F-116,335 S-116,335		27

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFC-102.	Research and development of Oregon's coastal fish stocks	1980	4	F-796,500 S-796,500		27
	AFC-111.	Regional Mark Processing Center	1981	2	F-165,000 S- 82,500		27
	AFC-112.	Stock assessment and genetic studies of anadromous fish	1981	2	F- 62,480 S- 62,480		27
	AFC-113.	Joint Oregon-Washington multijurisdictional salmon management program	1981	2	F-578,530 S-289,265		27
	AFC-117.	Assessment of the ocean distribution and contribution of northern California and southern Oregon fall chinook stocks	1981	2	F- 65,936 S- 65,936		27
	PENNSYLVANIA						
88-309	3-272-C.	Construction of wet lab-Benner Springs research station	1976	6	F- 19,355 S- 58,065	1982	19
	3-337-R.	Guidelines for effective management of commercial fish hatchery wastewater treatment systems	1980	5	F-235,511 S- 78,504		22
	3-339-R.	Lake Erie commercial fishery investigations	1980	3	F-167,031 S- 55,677		24
	PUERTO RICO						
88-309	2-331-R.	Commercial fisheries statistics	1978	4	F-413,500 S-137,833		35
	2-332-R.	Maintenance and operation of the commercial fisheries laboratory	1978	4	F-190,435 S-190,435		22
	2-333-R.	Monitoring and assessment of Puerto Rico's commercial fisheries	1978	4	F-532,000 S-177,333		31
	2-356-C.	Coordination and administration	1979	4	F-120,000 S- 40,000		20
	2-377-R.	Feasibility of hatchery culture of queen conch, Strombus gigas in Puerto Rico	1981	1	F- 26,250 S- 8,750	1982	19
	RHODE ISLAND						
88-309	3-302-D.	Lobster logbook and statistical analysis	1978	4	F- 63,897 S- 63,897	1982	35
	3-313-R.	Coastal fishery resource assessment	1979	3	F- 80,250 S- 26,750	1982	31
89-304	AFC-2.	Fish ladder construction	1974	9	F- 89,967 S- 89,967		19

Public Law	Project number	Project title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFC-4.	Striped bass stock assessment in Rhode Island waters (Emergency Striped Bass Research Study)	1981	2	F- 40,000 S- 20,000		29
	SOUTH CAROLINA						
88-309	2-357-R.	South Carolina fisheries statistics program (FY 1980-81-82)	1979	3	F-127,325 S- 42,442		35
89-304	AFC-8.	Monitoring and assessment of the S.C. commercial fishery for shad (FY 1980-81)	1979	3	F-127,494 S-127,494		25
	SOUTH DAKOTA						
88-309	1-155-R	Commercial production of food fishes in S.D. ponds	1980	3	F- 51,854 S- 17,285		19
	1-163-R.	Bionomics of rainbow smelt	1982	1	F- 10,000 S- 3,333		24
	TENNESSEE						
88-309	2-373-R.	Mussel resources survey	1980	4	F- 75,000 S- 25,000		32
	TEXAS						
88-309	2-385-R.	Texas commercial fisheries management program	1982	1	F-240,000 S- 80,000		34
	TRUST TERRITORY OF THE PACIFIC ISLANDS						
88-309	4-54-D.	Palau reef fish production	1982	1	F- 42,300 S- 17,660		35
	4-55-D.	Truk Lagoon small purse seine demonstration	1982	1	F- 57,000 S- 19,000		31
	UTAH						
88-309	1-149-R.	Physiological/genetic studies of trout strains in commercial and agency hatcheries	1979	3	F- 86,800 S- 33,945		20
	1-156-R.	Potential of Utah chub to support a baitfish industry	1980	3	F- 31,037 S- 10,980		23
	VIRGIN ISLANDS						
88-309	2-335-R.	Commercial fisheries research and development in the U.S. Virgin Islands	1978	5	F-134,205 S- 44,735		31
	VIRGINIA						
88-309	3-314-D.	Development of oyster resources	1979	3	F-150,000 S-150,000	1982	32
	3-321-D.	Fisheries profiles and plans	1979	4	F-228,153 S- 76,051		22
	3-335-D.	Commercial finfish and shellfish statistical collection	1980	2	F- 92,770 S- 30,923	1982	35

Public Law	Project number and title		Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	3-361-D.	Commercial finfishery and shellfishery statistical collection	1982	2	F-220,800 S- 73,599		35
89-304	AFC-10.	Anadromous fisheries research program, Virginia	1979	4	F-386,782 S-386,782		25
	AFC-11.	Assessment of larval striped bass stocks in Virginia waters (Emergency Striped Bass Research Study)	1980	3	F-226,766 S-113,383		29
	AFC-12.	Striped bass research, Virginia (Emergency Striped Bass Research Study)	1980	3	F-271,300 S-150,800		29
	WASHINGTON						
88-309	1-135-R.	Coastal dungeness crab project	1977	5	F-151,812 S- 50,605		31
	1-136-R.	Pacific cod, lingcod, rockfish assessment	1977	5	F-163,352 S- 54,452		26
	1-144-R.	Shellfish enhancement project	1979	4	F-205,069 S- 68,356		19
	1-152-R.	South coast marine fish/ shellfish monitoring	1979	3	F- 57,750 S- 19,250	1982	34
	1-154-R.	Coastal pink shrimp study	1979	3	F- 72,431 S- 24,144	1982	32
	1-158-R.	Japanese literature review	1980	2	F- 10,188 S- 3,397	1982	21
	1-159-R.	Coastal groundfish age determination	1981	3	F-103,000 S- 34,351		26
89-304	AFC-84.	Development of a spawning gravel cleaning machine	1977	5	F-137,315 S-137,315		27
	AFC-90.	Washington ocean salmon comprehensive sampling program	1978	5	F-242,500 S-242,500	1982	27
	AFC-97.	Big Beef Creek chum production assessment	1980	3	F-149,310 S-149,310	1982	27
	AFCS-104.	Development of Cedar River sockeye and chinook enhancement facility	1979	3	F-1,255,000 S-1,362,000 (Includes FWS share)		19
	AFC-107.	Skagit River spring chinook radio-tracking study	1981	1	F- 19,092 S- 19,092	1982	28
	AFC-109.	Nooksack River spring chinook radio-tracking study	1981	1	F- 16,000 S- 16,000	1982	28
	AFC-110.	Salmon-herring predator/ competitor interactions	1981	1	F-19,985 S-19,985	1982	28

Public Law		Project number and title	Date initiated	Duration	Estimated total cost	Date completed	Project narrative
			Year	Years	Dollars	Year	Page
	AFC-114.	Joint Washington-Oregon multijurisdictional salmon management program	1981	2	F-927,460 S-463,730		28
	AFC-115.	Lake Washington simulation model	1981	1	F- 31,390 S- 31,390		28
	AFC-116.	Coastal commercial net sampling	1981	1	F- 16,000 S- 16,000		28
	AFC-117.	Ocean distribution of northern California and southern Oregon fall chinook	1981	3	F- 65,936 S- 65,936		28
	AFC-118.	Treaty Indian catch monitoring system	1982	1	F- 73,000 S-184,751		28
	AFC-119.	Puget Sound commercial fishery sampling	1982	1	F- 94,750 S- 94,750		28
	AFC-120.	Coastal freshwater stock assessment	1982	1	F- 30,250 S- 30,250		28
	WEST VIRGINIA						
88-309	3-273-R.	Commercial fishery investigations	1976	6	F- 40,500 S- 13,500	1982	24
	3-311-R.	Ohio River commercial bait minnow investigations	1979	3	F- 49,500	1982	23
	3-372-R.	Commercial fishery investigations	1982	5	F- 33,750 S- 11,250		24
	WISCONSIN						
88-309	3-299-R.	Quota-controlled chub fishery for Wisconsin waters of Lake Michigan	1978	5	F-101,728 S- 33,907		24
89-304	AFC-15.	Rehabilitation of Green Bay walleye fishery	1979	4	F-132,500 S-132,500		23
	WYOMING						
88-309	1-129-R.	Dynamics and commercial potential of sucker populations in western impoundments	1977	5	F-106,000 S- 41,032	1982	24

PROGRAM ANALYSIS

For program analysis, projects are grouped under the type of activity undertaken rather than by State or Public Law. In doing so, the reader has all projects for the 1982 segment of the program, such as constuction, coordination, or research, in one section.

Under each type of activity included are project identification, principal investigator, and 1982 project segment cost, State and Federal. If projects were continued or completed in 1982 with prior year funds, no cost is indicated below.

Request for additional information about a project or for reprints of reports resulting from the work should be made to the appropriate NMFS Regional Office, State agency, or Cooperator. The Regional Offices, State agencies, and Cooperators, including addresses are listed on pages 40-43

AQUACULTURE

California 4-48-R — Wallis H. Clark, Jr. — Completed 1982

Morphophysiological fertilization study of white and green sturgeon - Develop basic information on fertilization and early development of white and green sturgeon.

California 4-51-R — Earl E. Ebert — Completed 1982

Shellfish culture investigations - Develop mass culture techniques for dungeness crab, pismo clam, and red abalone.

Colorado 1-133-R — Stephen A. Flickinger — Completed 1982

Intensification of commercial fish culture - Culture freshwater bass with use of grass carp to control aquatic vegetation.

Guam 4-42-D — Harry Kami — Completed 1982

Development of polyculture fish farming under tropical conditions - Increase production of prawns and other species on island for domestic and export markets.

Guam 4-58-D — Harry Kami — F- 20,000 S- 48,884

Development of polyculture fish farming - Increase efficiency and expand production of local aquaculture farms.

Hawaii 4-40-D — Takuji Fujimura — Completed 1981

Development of finfish aquaculture industry - Improve techniques for mass production of channel catfish fingerlings.

Hawaii 4-57-D — Takuji Fujimura — F-135,000 S- 48,000

Seaweed investigations - Develop procedure and determine economic feasibility of reestablishing Gracilaria in depleted areas of Hawaii.

Minnesota 3-316-R — Floyd A. Hennagir — Completed 1982

Leech culture study - Develop pond culture techniques for the leech, Nephelopsis obscura, to enable live bait dealers to rear this species.

Mississippi 2-327-R — Roland E. Reagan Jr. — Completed 1982

Selection of improved commercial traits in channel catfish - Select a cross breed domestic strain of channel catfish for rapid gain, fat content, and dress-out percentage.

Mississippi 2-376-R — George Passokey — F-61,800 S-20,600

Experimental treatment of catfish ponds with algal inhibitors - Evaluate the abundance and diversity of algae associated with off-flavor problems of commercially grown fresh water catfish.

Nevada 4-41-D — Robert E.L. Taylor — F- 7,312 S- 2,437

Rearing baitfish in western Nevada - Determine supply and demand for baitfish used in western Nevada and develop techniques for culture of minnows.

Nevada 4-60-R — Robert E.L. Taylor — F- 16,794 S- 4,498

Production of sterile grass carp - Develop surgical or chemical sterilization methods for grass carp and assess impact of transplanted stocks on aquatic environment.

Puerto Rico 2-377-R — Manuel L. Hernandez Avila — F- 26,250 S- 8,750

Feasibility of hatchery culture of queen conch, Strombus gigas in Puerto Rico - Develop technology to culture queen conch with emphasis on mass production of larvae.

South Dakota 1-155-R — Charles Scalet — Completed 1982

Commercial production of food fishes in South Dakota ponds - Determine the feasibility of culturing annual crops of channel catfish and rainbow trout in eastern South Dakota dugouts.

Washington 1-144-R — Ron Westley — Completed 1982

Shellfish enhancement project - Develop techniques for culture of mussels and other shellfishes (scallops, shrimp, abalone) not commercially available in Washington State.

CONSTRUCTION

FISH SCREENS AND STREAM IMPROVEMENT FACILITIES

Massachusetts AFC-19 — Joseph DiCarlo — F- 40,000 S- 40,000

Anadromous fisheries management - Maintain and enhance existing populations, restore historically important populations and establish new populations of anadromous fish, through construction of fish passage facilities.

Rhode Island AFC-2 — John Stolgitis — F- 18,700 S- 18,700

Fish ladder construction - Construction of fish passage facilities on Forge Road and Potowomut Pond Dams, Hunts River, and North Kingston-East Greenwich and Bradford Dam on the Pawcatuck River.

HATCHERIES AND HATCHERY FACILITIES

Connecticut AFC-14 — Michael Vernesoni — F- 21,600 S- 21,600

Kensington Atlantic salmon hatchery modernization - Increase the availability of production facilities for the rearing of Atlantic salmon smolts for release and re-establishment of this species in the Connecticut River.

Washington AFCS-104 — Donald Bartlett — F-276,820 S-276,820

Development of Cedar River sockeye and chinook enhancement facility - Construct a hatchery, rearing station, fish ladder and caretaker's facilities on the Cedar River near Landsburg Dam.

LABORATORIES

Arizona 4-49-R — Eugene P. Sturla — F- 2,925 S- 975

Fish disease control station - diagnostic laboratory - Renovation and equipping an existing facility that will have the capabilities of providing complete diagnostic services to state, county, city, and commercial aquaculture interests.

Massachusetts 3-218-C — Leigh Bridges — F- 0 S- 0

Construction of marine research station - Construct a marine research station which will provide central facilities for personnel now located at several temporary installations on Cape Cod.

Pennsylvania 3-272-C — Wilbur F. Hobbs — Completed 1982

Construction of wet lab - Benner Springs research station - Build a lab for research on fish diseases, propagation techniques, fish nutrition, and waste products.

VESSEL

New York 3-347-C — Chester S. Zawacki — F- 19,000 S- 19,000

Marine research vessel acquisition - Acquire a 35-foot research vessel for sampling New York's marine finfish and crustacean resources.

COORDINATION

California 4-50-S — Eugene Fleming — Completed 1982

Program coordination - Administration of Public Law 88-309 projects.

Louisiana 2-354-C — William S. Perret — Completed 1982

Coordination and data processing for Louisiana's Federal aid program - Provide supervision and administration over all commercial fisheries research and development projects and provide electronic processing and analysis for research data collected on these projects.

Maine 3-315-S — Richard P. Choate — Completed 1982

Coordination of research and development - Administer Maine's Public Law 88-309 program.

Maine 3-359-S — E. Penn Estabrook — F- 65,229 S- 21,743

Coordination of research and development - Administer Maine's Public Law 88-309 program.

New York 3-346-S — Samuel L. Finkelstein — F- 11,250 S- 11,250

Coordination III - Administer Public Law 88-309 projects.

Puerto Rico 2-356-C — Jose A. Collazo — F- 40,470 S- 13,490

Coordination and administration - Administer Puerto Rico's Public Law 88-309 program.

DISEASE AND PARASITE CONTROL

Maryland 3-310-R — Sara V. Otto — Completed 1982

Marine animal disease investigations - Determine distribution and intensity of disease affecting several species of marine animals in Chesapeake Bay and its tributaries.

Maryland 3-366-D — Rudolph Lukacovic — F- 61,143 S- 20,382

Fish environmental assessment - Determine distribution and intensity of diseases affecting marine animals (primary focus: molluscan shellfish) in Chesapeake Bay and tributaries by laboratory examination and field observations.

New Jersey 3-319-R — Harold H. Haskin — Completed 1982

Effects of MSX disease on oyster production in Delaware Bay - Provide continuing information on the fluctuation, prevalence, and intensity of MSX disease in Delaware Bay and on resultant oyster stock mortalities.

New Jersey 3-364-R — Harold H. Haskin — F- 24,000 S- 8,000

MSX disease and oyster production in Delaware Bay - Provide current information on prevalence and intensity of MSX disease on oyster populations in Delaware Bay with a view toward modification of planting practices to minimize oyster disease losses.

North Dakota 1-146-R — Harry L. Hollaway — F- 7,500 S- 2,500

Biology of Diplostomum spathaceum (eye-flukes) and its relationship to fish of commercial value - Determine incidence and effects of eye flukes on North Dakota reservoir fish.

Ohio 3-298-R — John L. Crites — Completed 1982

Yellow perch parasite research - Study impact of parasites upon growth and survival of yellow perch.

Oregon AFC-98 — John Conrad — F- 133,498 S- 133,498

Infectious disease program for salmon and steelhead hatcheries - Monitor fish condition and investigate epizootics to identify pathogens and prescribe control measures.

Utah 1-149-R — Charles Berry — F- 15,000 S- 5,000

Physiological/genetic studies of trout strains in commercial and agency hatcheries - Evaluate rainbow trout strains and rough fish for survival and disease resistance.

American Samoa 4-46-D — Henry Sesepasara — F- 53,390 S- 0

Fisheries technical assistance - Provide training and advisory services to local fishermen.

Delaware 3-280-D — Charles A. Lesser — Completed 1982

Technical assistance to commercial fisheries - Provide technical assistance to commercial fishermen, seafood industries, and governmental authorities regarding the management, enforcement, and dissemination of data pertaining to commercial fisheries.

Delaware 3-358-D — Charles A. Lesser — F- 31,400 S- 10,466

Technical assistance to commercial fisheries - Provide technical assistance to commercial fishermen, seafood industries, and government authorities on management, enforcement, and dissemination of data to improve management and economics of Delaware's commercial fisheries industries.

Florida 2-336-D — Sally S. Patrenos — F-142,550 S- 47,517

Fisheries extension and marketing services program - Initiated extension program designed to teach professional foods people the techniques of fish cookery; proper handling, storing, and preparing fish; and ways to maintain and expand consumer demand for fishery products.

Maine 3-305-D — Kenneth A. Honey — Completed 1982

Maine resources fisheries extension - Provide technical expertise and assistance to fishery research and management programs, and assist the fishing industry in developing ways to harvest and process renewable marine resources.

Maine 3-368-D — Frank Spencer — F- 32,309 S- 32,309

Fisheries technology service - Assist and disseminate information to the fishing industry of Maine on the latest developments in management, harvesting, and processing of renewable marine resources.

Maryland 3-326-D — F. William Sieling III — Completed 1982

Maryland fisheries extension - Disseminate scientific and technological information to the fishing industry and legislative officials, encourage the use of underutilized species of seafood in Maryland waters, and promote the planting of hatchery-reared seed oysters and hard clams.

Maryland 3-365-D — F. William Sieling III — F- 47,925 S- 15,975

Fisheries technology and advisory services - Facilitate communication between the biological-technical-managerial faculty and the producers and processors of fishery products in Maryland.

Massachusetts 3-294-D — Jay Wennemer — Completed 1982

Commercial fisheries extension service - Provide all segments of the Massachusetts fishing industry with information and technical assistance.

Massachusetts 3-363-D — Susan Faria/H. Arnold Carr — F- 83,286 S- 27,762

Commercial fisheries development program - Promote the harvesting, processing, and consumption of underutilized species, identify and introduce new and efficient fishing and processing techniques, promote proper handling of seafood to improve quality of fresh product available to the public, and increase effectiveness of communications between government and industry.

New Jersey 3-340-D — William Figley — F- 0 S- 0

Marine fisherman's coordination project - Provide the mechanism for the efficient dissemination of new commercial fishing technology, legislation and regulations, and results of pertinent scientific investigations to the commercial fishing community and the general public.

Washington 1-158-R — R. E. Westley — Completed 1982

Japanese literature review - Translate available knowledge on aquaculture.

MARKET DEVELOPMENT

Maine 3-304-D — Michael Moser — Completed 1982

Market and economic development - Increase sales of underutilized species, expand existing markets, and inform consumers and institutional buyers regarding the harvesting, processing, availability, and nutritional value of seafood products.

Massachusetts 3-303-D — Neil Murphy — Completed 1982

Massachusetts fisheries marketing program - Increase production and consumption of quality Massachusetts seafood products, foster interest in underutilized species, and increase seafood industry participation and support of fisheries marketing program.

OPERATION AND MAINTENANCE

New Hampshire AFC-5 — Charles F. Thoits III — F- 70,000 S- 70,000

Operation and maintenance of the Milford hatchery - Provide the personnel, feed, medication, and other activities necessary for the hatching and rearing to smolt size of approximately 500,000 anadromous salmonids.

Maine 3-329-D — Kenneth Honey — Completed 1982

Operation and maintenance of marine laboratory, West Boothbay Harbor - Provide the manpower necessary for the physical operation of the laboratory building as well as effecting necessary repairs and maintenance.

Puerto Rico 2-332-R — Carlos Cumpiano — F- 34,435 S- 34,435

Maintenance and operation of the commercial fisheries laboratory - Maintain the Mayaguez commercial fisheries laboratory.

PLANNING

New Hampshire 3-351-R — Edward Spurr — F- 21,600 S- 7,200

A comprehensive marine resources strategy - Develop a comprehensive strategy to address commercial fisheries research and development requirements based on an analysis of the major problems and priorities affecting New Hampshire's fisheries.

Virginia 3-321-D — Daniel J. Lonergan — F- 8,142 S- 2,714

Fisheries profiles and plans - Assemble known biologic, economic, and sociologic data as they relate to the commercial fisheries on a species by species basis and implement a grid system mapping the subaqueous land of Virginia.

RESEARCH

ENVIRONMENT

Estuarine:

New Jersey 3-342-R — John F. McClain — Completed 1982

Monitoring environmental quality of previously studied estuarine systems - Monitor environmental parameters of the Mullica-Great Bay and upper Barnegat Bay estuaries to determine whether the systems' quality is improving, declining, or remaining static.

Freshwater:

Pennsylvania 3-337-R — Delano R. Graff — F-17,386 S- 5,795

Guidelines for effective management of commercial fish hatchery wastewater treatment systems - Evaluate different types of wastewater treatment systems to assist the commercial fish growers.

FINFISH (FRESHWATER)

Baitfish:

Colorado 1-161-R — John Woodling — F- 0, S- 0

Baitfishes of Colorado - Prepare and publish a manual on identifying, rearing and using the baitfish resources of Colorado.

Utah 1-156-R — Charles Berry — F- 5,000, S- 1,666

Potential of the Utah chub to support a baitfish industry - Analyse the impact on fishery resources of the Utah chub and determine present and future demand in the baitfish industry in Utah.

West Virginia 3-311-R — Larry A. Neilson — Completed 1982

Ohio River commercial bait minnow investigations - Determine commercial potential, economic feasibility, and harvest methodology for bait fisheries on the Ohio River.

Buffalo and carp:

North Dakota 1-147-R — John Owen — Completed 1982

Jamestown reservoir commercial fishery investigations - Determine the commercial potential and harvesting techniques for carp, buffalo, white suckers, black bullhead, and yellow perch.

Lake trout:

Michigan 3-349-R — Myrl Keller — Completed 1982

Lake Michigan lake trout study - Obtain data requirements for improved assessment of the lake trout fishery resource in Lake Michigan.

Walleye:

Michigan AFC-14 — Robert Haas — F- 48,000, S- 48,000

Lake Erie walleye assessment - To determine the distribution and harvest of walleye stocks in western Lake Erie.

Wisconsin AFC-15 — Lee Kernen — F- 35,000, S- 35,000

Rehabilitation of Green Bay walleye fishery - Evaluate success of stocked fingerling and fry walleyes and double the existing standing stock through planting and curtailment of harvest.

Yellow perch:

Indiana 3-336-R — Thomas S. McComish — F- 20,000, S- 21,404

Movements of yellow perch in Indiana waters of Lake Michigan - Determine, through tagging, seasonal distribution of yellow perch by size, age, sex, maturity, temperature and depth.

Others:

Arkansas 2-371-R — Scott Henderson — F-24,195, S- 8,065

Commercial fishery survey - Gather data and compile information concerning the status of wild commercial fishery resource and evaluate regulations for commercial fishing.

Idaho 1-160-R — David Ortmann — Completed 1982

Commercial fishery feasibility and development - Determine the availability and quality of non-game fish species in the Snake River Basin.

Iowa 2-384-R — John G. Nickum — F-20,000, S- 6,667

Habitat associations and movements of shovelnose sturgeon with reference to spawning - Determine the habitats and other physical factors required by shovelnose sturgeons for successful reproduction in order to protect and enhance productivity of this commercial species.

Kansas 2-340-R — Robert Hartmann — Completed 1982

Marketable fisheries investigations - Determine the biological effects of marketable fish harvest on fish communities in Kansas reservoirs, and recommend commercial fisheries management practices for Kansas reservoirs.

Kentucky 2-368-R — Donald W. Johnson — Completed 1982

Commercial fishery evaluation - Determine population structure of species of fish, particularly paddlefish, that are affected by the use of commercial fishing gear.

Kentucky 2-388-R — Robert D. Hoyt — F- 20,000 S- 6,667

Population dynamics and biology of the paddle fish Polydon spathula in Lake Cumberland, KY- Estimate the size of the paddlefish population using mark and recapture methods.

Minnesota 3-344-R — John Spurrier — F- 20,000 S- 9,500

Lake Superior commercial fisheries assessment studies - Ascertain and monitor the status of lake trout and commercial fish stocks (lake herring, chubs, smelt) in the Minnesota waters of Lake Superior.

Montana 1-162-R — Robert Needham — F- 20,000 S- 5,000

Development and management of commercial fishing practices - Assess the commercial and gamefish species in Fort Peck reservoir.

New Mexico 2-366-R — Warren J. McNall — F- 20,000 S- 6,667

Intensive harvest of commercial species - Determine the effect of intensive harvest of white suckers on the fish populations in trout lakes.

Ohio 3-301-R — Michael R. Rawson — F- 0 S- 0

Commercial fishing gear mortality - Determine the effects of season, area, catch size, and net time on immediate mortality of commercial gear net released fishes and develop management proposals.

Oklahoma 2-387-R — Harold Namminga — F- 14,750 S- 4,917

Commercial lake monitoring study - Monitor selected fish populations in lakes undergoing commercial harvests in Oklahoma.

Pennsylvania 3-339-R — Roger Kenyon — F- 74,046 S- 24,682

Lake Erie commercial fishery investigations - Investigate year class fluctuations and early life histories of yellow perch, smelt, drum, whitefish, and walleye.

South Dakota 1-163-R — David Hamm — F- 10,000 S- 3,000

Bionomics of the rainbow smelt - Monitor the impacts of rainbow smelt population on a developing salmonid sport fishery in Lake Oahe.

West Virginia 3-273-R — Fred Leckie — Completed 1982

Commercial fishery investigations - Administer and monitor the Ohio River commercial fishery and determine levels of pesticides and complex chemical compounds in commercial fishes.

West Virginia 3-372-R — Fred Leckie — F- 6,750 S- 2,250

Commercial fishery investigations - Administer and monitor the Ohio River commercial fishery in West Virginia.

Wisconsin 3-299-R — Jim McNelly — F- 20,000 S- 6,666

Quota-controlled chub fishery for Wisconsin waters of Lake Michigan - Continue the State's chub assessment program to evaluate changes in the population to determine allowable harvest.

Wyoming 1-129-R — John Baughman — Completed 1982

Dynamics and commercial potential of sucker populations in western impoundments - Use gill nets, trap nets, purse seines, and shore seines to collect suckers for analysis of age, growth rate, condition, and sexual maturity.

FINFISH (MARINE OR ANADROMOUS)

Alewife and herring:

Maine AFC-21 — Clement J. Walton — F- 2,000 S- 2,000

Population biology and management of the alewife - (Alosa pseudoharengus) in Maine- Determine population characteristics and monitor catch, escapement, and production levels of the Damariscotta River alewife stock.

North Carolina AFC-17 — Michael Street — F- 15,000 S- 15,000

River herring spawning and water quality in the Chowan River - Determine reproductive success of river herring and assess the influence of water quality changes in the Chowan River.

Virginia AFC-10 — Joseph G. Loesch — F- 74,977 S- 74,977

Anadromous fisheries research program, Virginia - To collect catch and effort statistics from the Virginia river herring, American shad, and striped bass fisheries and determine indices of juvenile abundance to update the existing data base.

American shad:

Connecticut AFC-13 — Victor Crecco — F- 7,000 S- 7,000

Population dynamics of American shad in the Connecticut River - Determine levels of commercial fishing effort which furnish the highest sustainable yields and ensure an adequate spawning population; project the size of future spawning runs and gain insight into stock recruitment.

Georgia AFC-18 — Ronald J. Essig — F- 32,161 S- 32,161

Georgia commercial shad assessment - Quantify commercial shad landings, determine catch per unit effort and analyze data.

Maine AFC-20 — Thomas Squiers — Completed 1982

American shad enhancement and status of sturgeon stocks in Maine waters - Study adult and juvenile American shad in Kennebec River and tributaries. Also observe size of shortnose sturgeon.

Maine AFC-23 — Thomas Squiers — F- 36,454 S- 36,454

Kennebec River anadromous stock evaluation - Determine relative abundance indices for juvenile alosids and draft an Anadromous Fish Restoration Plan for the Kennebec River.

Maine AFC-24 — Lewis N. Flagg — F- 61,024 S- 61,024

Androscoggin River shad restoration, Maine - Restore anadromous fish runs to the Androscoggin River, determine timing/magnitude/reproductive success of anadromous clupeid runs, and assess upstream fish passage efficiency.

South Carolina AFC-8 — Glen F. Ulrich — F- 54,500 S- 54,500

Monitoring and assessment of the South Carolina commercial fishery for shad (FY 1980-81) - Develop catch effort indices of abundance for American shad in major river systems; monitor age, sex, and size composition; collect statistics on landings; and do a feasibility study of ocean sampling and tagging.

Atlantic salmon:

Connecticut AFS-4-R — James Moulton — Completed 1982

Connecticut River basin anadromous fish studies - Modernize and equip the Kensington Hatchery to adequately provide for the rejuvenation of Atlantic Salmon and rearing of fry and smolts.

Massachusetts AFS-4-R — Peter Oatis — Completed 1982

Connecticut River basin anadromous fish studies - Construct hatching and rearing facilities at the Roger Reed Hatchery to provide adequate space for rearing of smolts, kelt reconditioning, and holding of adult Atlantic salmon prior to spawning.

Groundfish:

Alaska 5-49-R — Phil Rigby — F- 60,000 S- 71,800

Gulf of Alaska - Bering Sea groundfish investigations - Collect landing data for groundfish caught off Alaska. Provide increased reporting accuracy of vessels, catch areas, and species composition, to gain better knowledge of the fisheries and status of stocks.

Washington 1-136-R — Jack Tagart — Completed 1982

Pacific cod, lingcod, rockfish assessment - Collect and analyze stock assessment data from port samplers, fishermen's log books and research cruises for implementing and monitoring the Pacific Fishery Management Council groundfish management plan.

Washington 1-159-R — Mark Pedersen — F- 28,056 S- 9,352

Coastal groundfish age determination - Collect information for groundfish management plan data base.

Pacific herring:

Alaska 5-50-R — Stephen M. Fried — F-120,000 S- 40,500

Stock assessment of Pacific herring, Bristol Bay, Alaska - Monitor the commercial Pacific herring roe fishery in the vicinity of Togiak Bay, western Alaska. Estimate biomass of spawning herring and estimate commercial fishery exploitation rate. Determine age composition, size, and sexual maturity of Pacific herring on the spawning grounds and harvested by the commercial fishery.

Alaska 5-51-R — Dennis Blankenbeckler — F- 60,000 S- 20,000

Pacific herring research - S.E. Alaska - Monitor the commercial Pacific herring roe fishery in southeast Alaska. Assess stock abundance with hydroacoustical equipment. Collect data on age, growth, and length frequencies. Survey spawning grounds to assess spawning success.

Pacific salmon:

Alaska AFC-59 — Doug Jones — Completed 1982

Pink salmon stock predictions-SE Alaska - Prepare 1982 forecasts of harvestable amounts of pink salmon. Evaluate current forecast techniques.

Alaska AFC-60 — Fred Bergander — Completed 1982

Sockeye stock assessment and evaluation-S.E. Alaska - Determine the strength of respective sockeye salmon stocks returning to the Chilkat Lakes. Identify factors contributing to variation in river migration rates. Evaluate and refine techniques designed to achieve desired escapement goals.

Alaska AFC-65 — Donald E. Rogers — F- 30,000 S- 30,000

Chignik sockeye studies - Estimate late season escapements of sockeye salmon into Chignik River on the Alaska Peninsula. Determine how prey selection behavior of sockeye salmon juveniles in Chignik Lake affects daily ration as a preliminary step to developing a growth and survival model for sockeye salmon juveniles in the lake.

Alaska AFC-66 — Scott Marshall — Completed 1982

Origin of chinook salmon in the S.E. Alaska troll fishery - Determine the origin of the major component stocks of chinook salmon contributing to the Alaska troll fishery. Identify the magnitude, timing, and composition of these stocks to allow a management scheme based on necessary optimum escapement levels.

Alaska AFC-67 — Philip Gray — F-100,000 S-127,900

Microwire tagging of wild coho salmon stocks - Evaluate and refine management techniques for wild coho salmon stocks in southeast Alaska through coded wire tagging studies.

Alaska AFC-68 — Scott Marshall — Completed 1982

Copper River - Bering River sockeye salmon stock separation - Establish a data base for the management of the commercial sockeye salmon by component stocks. Obtain information on age composition for all component stocks. Construct stock classification models for each major age class to allow allocations to the commercial fishery.

Alaska AFC-69 — Charles P. Meacham — Completed 1982

Bristol Bay salmon run forecast - Estimate abundance of juvenile salmon out-migrants from major Bristol Bay river systems. Determine age composition, sex ratio, length, and weight from the commercial catch, and escapement of Bristol Bay salmon. Forecast total salmon run size by age class and river system.

Alaska AFC-70 — Fred Bergander — F- 70,000 S- 72,300

Southeastern Alaska sockeye salmon stock apportionment studies - Collect information for the management of salmon fisheries and to construct a data base for forecasting timing and size of salmon runs and allocating salmon stocks to commercial fisheries. Provide a mark-recovery and biological sampling program for decision-making.

Alaska AFC-71 — Doug Jones — F-167,900 S-167,900

Southeastern Alaska pink and chum salmon studies - Insure optimum escapement of pink and chum salmon spawners into streams of southeast Alaska. Forecast timing, distribution, and magnitude of pink and chum salmon returns. Investigate and define relationships between environmental fluctuations of salmon returns.

Alaska AFC-72 — Scott Marshall — F-146,200 S-105,800

Southeastern Alaska port sampling - Determine migration routes, run timing, relative abundance, and contribution rates based on data obtained from results of coded wire tag recoveries.

California AFC-16 — A.C. Knutson, Jr. — F-455,653 S-455,653

Salmon and steelhead research, management and enhancement - 1) Determine numbers and pounds of commercial salmon landings and the contribution of marked and hatchery reared fish to the fishery. 2) Determine the spawning stock size - recruitment relations for Klamath basin salmon and steelhead.

Oregon AFC-99 — Stephen Lewis — Completed 1982

Management of the troll salmon fishery - Sample coastwide troll salmon landings and tabulate data as required for various State and Federal management programs.

Oregon AFC-102 — Jim Lichatowich — F-290,000 S-290,000

Research and development of Oregon's coastal fish stocks - Conduct field investigations on fall chinook and coho in the Sixes, Coquille and Elk Rivers.

Oregon AFC-111 — John Harville — F- 58,000 S- 29,000

Regional Mark Processing Center - Operate the Regional Mark Processing Center for identification of salmon stocks tagged, released and recovered in west coast fisheries.

Oregon AFC-112 — Jim Lichatowich — F- 62,480 S- 62,480

Stock assessment and genetic studies of anadromous fish - Extract, compile, and analyze coded wire tag data to determine ocean survival, distribution and contribution of selected hatchery and wild stocks.

Oregon AFC-113 — Steve Lewis — F-300,000 S-150,000

Joint Oregon-Washington multijurisdictional salmon management program - Tag hatchery and wild stocks; monitor the commercial and recreational ocean salmon catch at all Oregon landing ports, recover tagged fish, remove and decode tags and enter information in agency computers.

Oregon AFC-117 — John Harville — F- 36,936 S- 36,936

Assessment of the ocean distribution and contribution of northern California and southern Oregon fall chinook stocks - Initiate a logbook program and a concentrated tag recovery effort for depressed Klamath River fall chinook stocks in response to management needs of the Pacific Fishery Management Council.

Washington AFC-84 — Gary C. Bailey — F- 0 S- 0

Development of a spawning gravel cleaning machine - Develop a machine for removal of detrimental fine materials in natural salmon spawning beds.

Washington AFC-90 — Lloyd Phinney — Completed 1982

Washington ocean salmon comprehensive sampling program - Monitor the commercial and sport fisheries catch at major ports for mark recovery, biological and catch and effort data for State and MFCMA management.

Washington AFC-97 — Ernest Salo — Completed 1982

Big Beef Creek chum production assessment - Determine egg-to-fry survival as a measure of spawning gravel cleaning success and continue studies of the role of visual and olfactory cues in species recognition by chum and coho during upstream migration.

Washington AFC-107 — Rick Granstrand-Skagit River Cooperative — Completed 1982

Skagit River spring chinook radio-tracking study - Tag Skagit River spring chinook with radio-transmitters and track their movement through the Skagit River system.

Washington AFC-109 — Michael Barclay-Nooksack Indian Tribe — Completed 1982

Nooksack River spring chinook radio-tracking study - Tag Nooksack River spring chinook with radio-transmitters and track for indication of their migration, behavior, timing and location of spawning.

Washington AFC-110 — Kurt L. Fresh — Completed 1982

Salmon-herring predator/competitor interactions - Analyze stomach contents of salmon and herring for information on growth and survival of these species in Puget Sound.

Washington AFC-114 — Lee Blankenship — F-533,100 S-266,550

Joint Washington-Oregon multijurisdictional salmon management program - Tag hatchery and wild stocks; monitor the commercial and recreational ocean salmon catch at Washington landing ports, recover tagged fish, remove and decode tags and enter information in agency computers.

Washington AFC-115 — Steve Schroder — F- 31,390 S- 31,390

Lake Washington simulation model - Determine by simulation modelling, the effects of implanting trout and various fishery management techniques upon sockeye, chinook, and coho that utilize the Lake Washington watershed.

Washington AFC-116 — Dick Stone — F- 16,000 S- 16,000

Coastal commercial net sampling - Collect data on catch and effort, days fished, gear type, species, age and sex of salmon taken by the commercial net fishery in Grays Harbor and Willapa Bay.

Washington AFC-117 — John Harville — F- 36,936 S- 36,936

Ocean distribution of northern California and southern Oregon fall chinook - Initiate a logbook program and a concentrated tag recovery effort for depressed Klamath River fall chinook stocks.

Washington AFC-118 — Gary Graves-Northwest Indian Fisheries Commission — F- 73,000 S-184,751

Treaty Indian catch monitoring system - Establish and maintain a computerized record of salmon catch by 15 western Washington Treaty Tribes.

Washington AFC-119 — Paul Sekulich — F- 94,750 S- 94,750

Puget Sound commercial fishery sampling - Collect catch data from the Puget Sound net fisheries.

Washington AFC-120 — Bill Wood — F- 30,250 S- 30,250

Coastal freshwater stock assessment - Conduct spawning surveys for estimating juvenile production in major Washington watersheds between Grays Harbor and the Quillayute River.

Striped bass:

Alabama AFCS-12 — R. Vernon Minton — F- 94,000 S- 94,000 (Includes FWS share)

Striped bass production and stocking experiments in Alabama coastal areas (Study No. 2) - To reestablish a striped bass fishery in Alabama by aquaculture and release of fingerlings.

Alabama AFC-13 — Wayne Shell — F- 19,650 S- 19,650

Increasing yield of striped bass fingerlings through intensive culturing methods - Develop diets for larval and postlarval fish and determine disease organisms affecting survival and recommend treatment.

Maryland AFC-11 — F. Douglas Martin — F- 20,000 S- 10,000

Striped bass research, Maryland - To estimate striped bass egg and larval distribution and abundance in the Potomac estuary.

Maryland AFC-13 — Edward D. Houde — F- 24,696 S- 24,696

Striped bass fishery enhancement investigations - Determine relative viabilities and potential for growth of striped bass larvae originating from adult stock spawning in three areas of Chesapeake Bay, and develop methods to use hatchery stocks to aid in population assessment of wild populations.

Massachusetts AFC-18 — Randall Fairbanks — F- 0, S- 0

Characterization and Massachusetts commercial striped bass landings - Determine age and sex by season and location of commercially caught striped bass in Massachusetts waters.

Mississippi AFCS-7 — Thomas D. McIlwain — F- 66,000, S- 66,000

Striped bass restoration program - Mississippi Gulf Coast - Stock South Carolina striped bass in the Biloxi Bay system and establish a strain which will use the coastal streams, estuaries, and open Gulf of Mexico waters.

New Jersey AFC-4 — Peter J. Himchak — Completed 1982

Monitoring of the status of the striped bass population in New Jersey II - Characterize the striped bass fishery in New Jersey waters, estimate young-of-the-year recruitment to the fishery, and examine over-wintering schools of striped bass in state waters.

New Jersey AFC-5 — Peter J. Himchak — F- 34,000, S- 17,000

Monitoring of the status of the striped bass population in New Jersey - Estimate recruitment of young-of-year striped bass to the state fishery and characterize by age, sex and size the striped bass fishery in New Jersey waters.

New York AFC-10 — Bryon Young — Completed 1982

A study of the striped bass in the marine district of New York State #3 - Investigate age, weight, length, and sex structure of the striped bass in New York coastal waters and study year-class production in the Hudson River.

New York AFC-11 — Robert E. Brandt — F- 43,357, S- 21,685

Biology and management of striped bass in New York waters - To provide useful and vitally needed information for development of interim regulations for striped bass conservation and management in state waters.

New York AFC-12 — Byron Young — F- 53,655, S- 53,655

A study of the striped bass in the marine district of New York State IV - Continue collection of size, age, and sex data for the striped bass fishery, assess the effectiveness of management strategies in New York, and study striped bass production in the Hudson River to provide indices of year-class strength.

North Carolina AFC-18 — Michael W. Street — F- 24,000, S- 12,000

An investigation of size, age, and sex of North Carolina striped bass - To determine size, age, and sex of striped bass found in the Roanoke River, Albemarle Sound and the Atlantic ocean off North Carolina.

North Carolina AFC-19 — Michael W. Street — F- 34,000, S- 34,000

Roanoke River striped bass investigation - Estimate the magnitude of the spawning population by the mark-recapture method; determine exploitation rate of different harvest methods. Estimate the commercial and recreational harvest of striped bass in Roanoke River and the fishing effort expended. Estimate the relative number of striped bass eggs spawned in the major spawning area. Determine if relationships can be demonstrated among various environmental factors and relative abundance of striped bass in Roanoke River and Albemarle Sound.

Rhode Island AFC-4 — John F. O'Brien — F- 20,000, S- 10,000

Striped bass stock assessment in Rhode Island waters - Characterize the composition of Rhode Island striped bass commercial landings to help assess the current status of coastal stocks and determine the level of exploitation by various fisheries.

Virginia AFC-11 — George C. Grant — F- 0, S- 0

Assessment of larval striped bass stocks in Virginia waters - To estimate striped bass egg and larval abundance and distribution in the York River system.

Virginia AFC-12 — Robert K. Dias — F-114,954, S- 57,477

Striped bass research, Virginia - To establish relative numbers of juvenile striped bass and identify cohabitant species in the James, York, and Rappahannock River systems.

Others:

Alabama 2-380-R. Walter M. Tatum F-123,200 S- 41,067

Research and management of Alabama coastal fisheries - Project I: Assess and monitor larval and postlarval stages of penaeid shrimp, blue crab, and fish in Alabama Coastal waters and recommend management regulations. Project II: Review and appraise the environmental degradation potential or possible benefits arising from proposed construction and development in Coastal Alabama. Project III: Spawn and produce larvae from marine species deemed to possess mariculture potential in Alabama including, but not limited to the following species: gulf killifish (Fundulus grandis), red drum (Sciaenops ocellata), spotted seatrout (Cynoscion nebulosus), red snapper (Lutjanus campechanus), Florida pompano (Trachinotus carolinus), and southern flounder (Paralichthys lithostigma).

California 4-52-D. Richard Klingbeil Completed 1982

Fisheries monitoring, assessment, and evaluation - Survey and sample landings of northern anchovy, Pacific sardine, Pacific mackerel, jack mackerel, and other resources of the Southern California Bight.

California 4-59-D. Richard Klingbeil F-340,035 S-113,346

Fisheries monitoring and assessment program - Monitoring, assessment, and evaluation of the commercial fisheries of Southern California.

Florida 2-341-R. Karen Steidinger F- 78,090 S- 26,030

Florida's marine resources research, development, and management program - Project 1: establish population and catch information for the management of selected marine vertebrate and invertebrate species. Project 2: Establish life history information for the management of marine fisheries. Project 3: Establish and refine aquaculture techniques for spawning and rearing of Macrobrachium.

Louisiana 2-343-R. Gerald Adkins Completed 1982

An evaluation of gill nets of various mesh sizes - Evaluate the efficiency of mono- and multifilament gill nets of various sizes for capturing important commercial finfish.

Louisiana 2-364-R. Vincent Guillory Completed 1982

A study of Gulf menhaden in Louisiana - Determine species composition, number and weight of incidental catch of fish in the Louisiana Gulf menhaden purse seine fishery and evaluate various external tags for marking Gulf menhaden.

Maryland AFC-10. C.J. O'Dell F- 50,283 S- 50,283

Survey and inventory of anadromous fish spawning areas - To determine which streams in the Patuxent River basin support spawning migrations of anadromous and estuarine fish and to identify species and spawning areas.

Massachusetts 3-287-R. Arnold B. Howe F- 70,600 S- 70,600

Coastwide fishery resource assessment - Determine species composition and abundance of fish populations in coastal Massachusetts waters.

Mississippi 2-296-R. J. Y. Christmas Completed 1982

Fishery monitoring and assessment - Collect representative samples of shellfish (except oysters) and finfish as they occur in territorial waters each month.

Mississippi 2-325-R. Robin M. Overstreet Completed 1982

Commercial fishes of Mississippi: spawning and miscellaneous biological factors - Determine the season of spawning, size of spawning fish, fecundity, and possible area of spawning for the spotted seatrout and red drum in Mississippi Sound and adjacent waters.

New Hampshire 3-350-R. John Nelson Completed 1982

An investigation of commercially important fisheries in New Hampshire coastal and estuarine waters - Monitor seasonal fluctuations, habitat and food sources of commercially important finish and shellfish in the inshore waters of New Hampshire.

New Jersey 3-367-R. Paul G. Scarlett F- 42,525 S- 14,175

Life history investigations of marine fisheries - Determine migrations, seasonal movements, and stock identification of winter flounder and blue crabs from selected New Jersey estuaries, and assess the distribution of flounder harvest between commercial and recreational fishermen.

North Carolina 2-386-R. Michael W. Street F- 64,000
S- 21,334

Assessment of North Carolina commercial finfisheries: Project I: Determine relative abundance, growth, ages, species composition, distribution and migration of species in the long haul and pound net fisheries of the Pamlico Sound area and the winter trawl fishery in the territorial sea. Project II: Determine the number of populations of Atlantic croaker in an area between Chesapeake Bay and South Carolina. To determine the degree of intermixing of populations in this area. Project III: Obtain data on migration and stock identification of Micropogonias undulatus.

North Carolina AFCS-16 Michael W. Street F-216,355
S-216,355

North Carolina anadromous fisheries management program - Collect, analyze, and report information on North Carolina anadromous fisheries for use in management of the fisheries and eventual preparation of management plans.

Oregon 1-151-R. Robert Demory F-144,851
S- 48,285

Groundfish and shrimp assessment - Collect and analyze fishery and research data to determine stock size, yield, catch per unit effort, and mortality rates.

Puerto Rico 2-333-R. Charles Boardman F-254,795
S- 84,932

Monitoring and assessment of Puerto Rico's commercial fisheries - Determine seasonal and yearly variation in deepwater demersal fish and spiny lobster.

Rhode Island 3-313-R. Timothy R. Lynch Completed 1982

Coastal fishery resource assessment - Design and implement a seasonal bottom trawl survey for the collection of fishery statistical data.

Trust Territory 4-55-D. Michael C. White F- 57,000
S- 19,000

Truk Lagoon small purse seine demonstration - Development of small purse seine for harvesting small pelagics in Truk Lagoon.

Virgin Islands 2-335-R. David Benjamin F- 20,000
S- 6,667

Commercial fisheries research and development in the U.S. Virgin Islands - To identify needs and implement management strategies to achieve the optimum sustained use of the Virgin Islands commercial marine fishery resources: Part I: Fisheries statistics of the Virgin Islands - To collect, analyze, and evaluate fisheries statistics in the U.S. Virgin Islands in order to acquaint administrative levels with the real value and extent of Virgin Islands fisheries and so enable enhacement through planning facilities and programs. Part II: Monitoring and assessment of Virgin Islands fisheries - To identify, recommend, and implement commercial fishery management practices for the Virgin Islands marine resource.

SHELLFISH

Clams:

Arizona 4-56-D. Dave Roe F- 54,255
S- 18,085

Distribution and relative abundance of freshwater clams - Stock assessment of Corbicula sp. of the Colorado River.

Crabs:

New Jersey 3-354-D. Gale Critchlow Completed 1982

Management of commercial fishery for blue crabs - Determine population parameters of the blue crab resource in Delaware Bay.

Washington 1-135-R. Tom Northup Completed 1982

Coastal dungeness crab project - Sample crab at canneries and landing ports to collect management data.

Lobster:

Connecticut 3-374-R. Mark Blake F- 14,225
S- 14,225

Connecticut lobster investigations - Study adult population characteristics, reproductive abnormalities, larval ecology, and juvenile abundance of American lobster in Long Island Sound.

Maine 3-300-R. James C. Thomas Completed 1982

Lobster stock assessment - Survey commercial lobster catch, determine stock-progeny recruitment relationships, and develop a lobster management plan.

Maine 3-370-R. James C. Thomas F- 88,030
S- 88-031

Lobster stock assessment - Monitor current and previous biological and socio-economic conditions in Maine's lobster fishery, increase precision of population parameters, and study interaction of spawning stock size, egg production and nursery areas, to resultant recruitment into the commercial harvest.

New York 3-333-R. Philip T. Briggs Completed 1982

Movement, mortality rates, and growth of American lobster - Tag and recover American lobsters to determine growth, movement, and mortality.

New York 3-357-R. Philip T. Briggs F- 7,840
S- 7,840

Investigation of the American lobster in eastern Long Island Sound - Assess the size composition, sex ratios, size at maturity, movements, mortality rates and incremental growth of American lobsters in eastern Long Island Sound.

Mussels:

Illinois 3-327-R. Richard E. Sparks F- 9,969
S- 3,323

Effects of three commercial harvesting methods on mussel beds - Determine immediate and long-term effects of harvesting methods on Mississippi River mussel beds.

Illinois 3-373-R. Richard E. Sparks F- 9,962
S- 3,321

Effects of fleeting areas on mussel beds - Determine effects of a new river terminal and barge fleeting area on existing mussel bed in the Illinois River.

Tennessee 2-373-R. Earl Hayes F- 18,775
S- 6,258

Mussel resources survey - Determine the current population of mussels in the waters of Tennessee.

Oysters:

Florida 2-370-D. Lawrence Sangaree F- 19,360
S- 6,453

Oyster cultivation by reef construction - Develop techniques to enable oystermen to increase commercial production.

Louisiana 2-353-D. William Perret Completed 1982

Permanent monument for oyster lease surveying - Place additional water bottom acreage under monument control and establish permanent monuments throughout coastal Louisiana for the purpose of surveying oyster leases.

Virginia 3-314-D. VMRC Staff Completed 1982

Development of oyster resources - Plant oyster cultch to provide an adequate spatfall-collecting medium and monitor success of oyster spatfall and growth.

Shrimp:

Washington 1-154-R. Tom Northup Completed 1982

Coastal pink shrimp study - Conduct survey cruises and monitor coastal pink shrimp landings to collect biological information needs for management under the MFCMA.

Others:

California 4-53-D. Richard Dixon Completed 1982

Demersal nearshore commercial invertebrate evaluation - Monitor and assess the condition of the invertebrate resources and the commercial value. Includes sea urchins, rock crabs, and abalone.

Georgia 2-319-R. Henry L. Ansley F- 95,435
S- 31,812

Studies and assessment of Georgia's fishery resources - Project I: Survey of Georgia's major marine fishery resources - Monitor penaeid shrimp and blue crab populations in coastal Georgia estuaries in order to provide managers with timely information for decision making; and, to increase the data base of knowledge relative to selected aspects of the life histories of Georgia's major coastal finfishes. Project II: Penaeid shrimp migration and growth along the Georgia coast - Determine movement and growth of commercially important penaeid shrimp in estuaries and coastal marine waters along the Georgia coast. Project III: Juvenile penaeid shrimp, blue crab, and finfish assessment in coastal Georgia - To define the major nursery areas in Georgia's estuaries. Project IV: Identification and quantification of spiny lobster populations on the Georgia outer continental shelf. Identify and quantify the spiny lobster population(s) on selected live bottom areas of the Georgia outer continental shelf and determine the feasibility of commercial harvest.

Georgia 2-379-R. Susan Shipman F- 77,700
S- 25,900

Studies and assessment of Georgia's marine fishery resources - Project I: Determine the seasonal abundance, size ranges and sexual maturity of penaeid shrimp and blue crabs in selected estuarine and coastal marine waters of coastal Georgia, assess various environmental parameters which may affect penaeid shrimp and blue crab populations and availability for harvest, and determine the seasonal and length frequencies of coastal finfishes including but not limited to spotted sea trout (Cynoscion nebulosus), summer trout (C. regalis), spot (Loistomus xanthurus), southern kingfish (Menticirrhus americanus), gulf kingfish (M. littoralis), croaker (Micropogon undulatus), black drum (Pogonias cromis), red drum (Sciaenops ocellata), summer flounder (Paralichthys dentatus), and winter flounder (P. lethostigma). Project II: Determine the major areas in coastal Georgia which harbor high populations of juvenile penaeid shrimp, blue crabs, and coastal finfishes, and define the physical and chemical environmental parameters associated with these areas. Project III: To determine movement and growth of commercially important penaeid shrimp in estuarine and coastal waters along the Georgia coast.

Louisiana 2-381-R. Philip Bromen F-183,000
S- 61,000

Monitoring and assessment activities in Louisiana's coastal waters - Monitor shrimp and groundfish populations in Louisiana's territorial waters, monitor hydrological conditions associated with biological samples in Louisiana's territorial waters, and correlate hydrological conditions in the territorial waters with biological data collected in the trawl samples.

Mississippi 2-382-R. Thomas D. McIlwain F-133,278
S- 44,426

Monitoring and assessment - Mississippi coastal fisheries - Assess adult finfish stocks in Mississippi Sound and adjacent waters with emphasis placed on spotted seatrout, striped mullet and red drum. Collect and analyze pertinent environmental data and representatives of commercial species of marine shellfish, collect and analyze data on the condition of oyster reefs in Mississippi to determine the number of live oysters and investigate the feasibility of rearing red drum (Sciaenops ocellata) in a closed raceway culture facility.

New Jersey 3-332-R. Thomas McCloy F- 42,235
S- 42,235

Inventory of New Jersey's estuarine shellfish resources - Inventory estuarine shellfish resource and monitor annual recruitment of hard clams and oysters, evaluate efficacy of hard clam relay program.

New York 3-307-D. Stephen A. Hendrickson Completed 1982

Shellfish transplant in the marine district of New York State #3 - Transplant shellfish from uncertified to clean water areas for cleansing and market harvesting and introduce spawning stock to selected bays and harbors.

New York 3-308-D. John Hofmann Completed 1982

Operation of mobile laboratories for shellfish sanitation control #2 - Make sanitary examinations of shellfish harvest areas and help food inspectors make monthly evaluations of the general sanitation of New York's processing plants.

New York 3-309-R. Richard E. Fox Completed 1982

Assessment of New York's shellfish resources - Establish a population index program to measure relative condition of the hard clam resource of Great South Bay and locate shellfish resources by exploratory fishing.

New York 3-355-D. Stephen A. Hendrickson F- 52,000
S- 52,000

Shellfish resource promotion - Transplant shellfish from polluted to clean waters for cleansing, introduce sexually mature shellfish to increase reproduction potential, and control grow-out and release of sub-legal size shellfish into selected New York waters for future harvesting.

New York 3-356-R. Richard E. Fox F- 18,633
S- 18,633

Assessment of New York's shellfish resources II - Provide shellfish population density and distribution information and descriptions of shellfish industry participation to serve the needs of state and local government resource managers.

New York 3-360-D. John Hofmann F- 38,627
S- 38,627

Shellfish sanitation control utilizing mobile laboratories III - Utilize mobile laboratories to maintain sanitary suveillance of shellfish harvest areas and processors.

Texas 2-385-R. Terry J. Cody F-240,000
S- 80,000

Texas commercial fisheries management program - Determine the status of shrimp populations in Texas bays to assist the Texas Legislature in formulating shrimping regulations. Monitor sampling stations to determine trends in shrimp relative abundance and size. Recommend opening and closing seasons. Determine flexible seasons for the harvest of white shrimp in bays and the Gulf of Mexico as an alternative for the current fixed seasons. Prepare an annual report (assessment) of study results and management recommendations.

Washington 1-152-R. Tom Northup Completed 1982

South coast marine fish/shellfish monitoring - Collect landings and biological data on groundfish, shrimp, and claws for improved resource management.

STATISTICS

American Samoa 4-47-D. Henry Sesepasara Completed 1982

Statistical analysis of American Samoa fisheries - Collection of catch-effort and biological data from foreign longline and domestic fishing vessels.

Connecticut 3-278-R. Robert A. Jones Completed 1982

Commercial fishery monitoring program - Monitor catch/effort statistics and certain economic factors of the commercial fishery and provide a data base through computer analysis for the development of management proposals.

Kansas 2-389-R. Jim Stephen F- 20,000
S- 6,667

Kansas commercial fisheries statistics - Determine the annual commercial harvest or production and value of species resulting from both the wild fishery and aquaculture industries.

Maryland 3-345-D. Howard J. King III F- 69,426
S- 34,769

Maryland fisheries statistics - Maintain a comprehensive catch reporting system for Maryland commercial fisheries.

Massachusetts 3-194-D. Charles O. Anderson, Jr. Completed 1982

Collection, compilation, evaluation, and dissemination of commercial fisheries statistics - Develop a complete and accurate commercial fisheries statistical program for all phases of the State's varied commercial fishing enterprises.

Massachusetts 3-371-D. Charles O. Anderson, Jr. F- 85,024
S- 56,683

Collection, compilation, evaluation, and dissemination of Massachusetts fishery statistics - Collect and analyze commercial fisheries landings data, and establish an EDP center to assist in program evaluation.

Missouri 2-363-R. Dan Dickneite F- 45,921
S- 15,307

Research and management of Missouri's commercial fisheries resources - Determine the number of commercial fishermen, pounds of fish harvested, and the wholesale value for Missouri's River commercial fisheries. Project I: Missouri's commercial fishery harvest - To determine the number of commercial fishermen, pounds of fish harvested, and the wholesale value for Missouri's river commercial fisheries. Project II: Maintenance, enhancement, and evaluation of commercial fisheries habitat created in the Missouri and Mississippi River through agency coordination - To preserve and enhance Missouri's commercial fisheries

by motivating the various construction agencies to preserve and restore fish habitat in future and on-going projects and to assist in evaluating these efforts. Project III: The development of a qualitative system to evaluate Missouri's commercial fish populations - To select population parameters and establish acceptable levels of each which would provide a qualitative method of assessing the status of important commercial fish species populations such as carp, buffalo, sp., catfish sp., and freshwater drum in the Missouri River and to determine the most effective sampling methods and techniques to obtain a representative sample for assessing those populations.

Nebraska 2-359-R. Larry A. Witt F- 22,501
S- 7,500

Population estimates of Missouri River fishes - Use mark-recapture data to estimate populations.

Nebraska 2-360-R. Melvin Taylor F- 9,694
S- 3,231

Inland commercial fisheries investigations - Monitor activities of the commercial fishermen and collect data from harvested species.

New Hampshire 3-343-D. Leigh R. Welcome F- 18,000
S- 6,000

Statistical data acquisition for the marine fisheries of New Hampshire - Develop and implement a catch and effort statistical collection system for the finfish and lobster commercial fisheries of New Hampshire.

New Jersey 3-353-D. John Makai Completed 1982

Commercial fisheries data collection - Initiate a small scale landings data collection system by the use of a license/credit card weighout slip system for New Jersey's commercial oyster fishery.

Northern Marianas 4-61-D. Nicolas Guerrero F- 42,000
S- 6,500

Fisheries data collection program - Development of data collection system for Northern Marianas fisheries.

Oklahoma 2-383-R. Harold Namminga F- 5,250
S- 1,750

Commercial Statistics II - Collect and analyze commercial fishery harvest results.

Puerto Rico 2-331-R. Jose Collazo F- 57,058
S- 19,019

Commercial fisheries statistics - Collect and analyze commercial fisheries catch statistics from coastal Puerto Rico.

Rhode Island 3-302-D. Timothy Lynch Completed 1982

Lobster logbook and statistical analysis - Use a logbook system in the Rhode Island lobster fishery to acquire catch and effort data necessary for managing the resource.

South Carolina 2-357-R. Dale Theiling F- 23,400
S- 7,800

South Carolina fisheries statistics program (FY 1980-81-82) - Collect catch, effort, and economic data of South Carolina's commercial fisheries. Compile, analyze and provide information to appropriate users.

Trust Territory 4-54-D. Toshiro Paulis F- 42,300
S- 5,598

Palau reef fish production - Development of baseline information on Palau's fisheries.

Virginia 3-335-D. William L. Baker Completed 1982

Commercial finfish and shellfish statistical collection - To collect and compile monthly catch data on the Virginia commercial fisheries harvest.

Virginia 3-361-D. Paul J. Anninos F-135,800
S- 45,266

Commercial finfishery and shellfishery statistical collection - Continue efforts in the collection of Virginia's commercial finfish and shellfish catch statistics and harvestor employment information.

REGIONAL HIGHLIGHTS

The Grant-in-Aid for Fisheries programs (P.L. 309, P.L. 89-304) have, since their inception, provided financial assistance to the States and territories for purposes of developing and enhancing the commercial and anadromous fisheries of the United States. Most of the funds have been used for acquiring resource and fisheries information needed for management decision-making. Prior to 1976, the funds were directed almost exclusively at the management of intra-and interstate fisheries. Since the passage of the Magnuson Fishery Conservation and Management Act of 1976, however, the percentage of the Federal funds directed at cooperative State-Federal management of fisheries which fall under the purview of that act has increased to approximately 60 percent. The following regional highlights describe the contributions these programs make to the management of the commercial and anadromous fisheries of the United States.

Northeast Region

Funding support to the Northeast Regional states under P.L. 88-309 for collection, evaluation, and dissemination of commercial fisheries statistics has been instrumental in the development and continuity of catch reporting systems used to determine the economic stature and sustained yields of the coastal and inland fishery resources. Statistical data obtained by the states are analyzed and presented in the form of reports and publications for use by the public and for management purposes on a local, regional, and national basis. Of particular importance is the assurance that these activities, from a Northeast regional perspective, will meet the mutual data needs of the states, the National Marine Fisheries Service, and the Fishery Management Councils.

Resource assessment projects provide an expanded data base to supply needed information concerning the distribution and abundance of important fishery stocks along the Atlantic coast and the Great Lakes Region. Project benefits accrue directly to state and Federal management agencies, fishery user groups, and the general public. Data collected by assessment studies funded under P.L. 88-309 have been used for the preparation of management plans under the Magnuson Fishery Conservation and Management Act of 1976 for American lobster, cod, haddock, and yellowtail flounder. The New England Fishery Management Council used information collected from resource assessment projects in 1980 to increase the yellowtail flounder quota from 5,000 to 15,000 metric tons resulting in approximately $11.0 million in value of additional catch to fishermen. Similarly, other projects under P.L. 88-309 as well as P.L. 89-304 directly contribute to lake wide management models for yellow perch, chub, lake trout, white bass, and walleye developed by the Great Lakes Fishery Commission through interagency coordination and negotiations.

Population monitoring studies have also been beneficial for addressing regional interests relating to water quality and habitat protection. Project results are being used to develop dredge spoil site recommendations, analyze pesticide and heavy metal concentrations in commercial fish species, evaluate the effects of proposed barge fleeting areas on freshwater mussels, assess increased user demands for water resources in relation to environmental alterations of estuarine systems, and provide commercial fish farmers with hatchery effluent guidelines to minimize adverse intrusions on local aquatic resources. Also, under P.L. 89-304, a major effort is being made to restore runs of anadromous species to the spawning habitat from which dam construction had excluded them for many years. These efforts include the construction of fish passage facilities for alewife and American shad. In the Northeast, one of major beneficiaries of the restoration programs is the lobster industry which has traditionally used, for bait, up to 75 percent of the alewife harvest for bait.

Projects funded under P.L. 89-304 provide the State/Federal Fisheries Management Program with population parameter data for interjurisdictional fishery stocks of river herring, American shad, and striped bass. During 1982, studies were continued under the emergency provisions (Section 7)) of the Anadromous Fish Conservation Act to monitor year class success, delineate the range and extent of nursery habitat, and to determine age, sex, and length relationships for commercial and recreational landings of striped bass. From these activities, a data base is evolving which will aid the implementation of an interstate management plan for striped bass of the territorial sea of the Atlantic coast from Maine to North Carolina.

Anadromous fish hatchery projects have also supported interagency regional initiatives for restoring Atlantic Salmon to their historical range in the Connecticut and Merrimack Rivers in New England. Other projects include enhancing a coastal recreational fishery for Pacific salmon and rehabilitating walleye stocks in Lake Michigan.

Shellfish research and development projects under P.L. 88-309 in 1982 included efforts to sustain and enhance the biological conditions of the state resources as well as the economic return to the commercial shell fish industries. This was accomplished through monitoring of disease prevalence and intensity, shell planting for supplementing oyster cultch, and population assessment to allow evaluation of commercial fishery regulatory measures for lobster, hard clams, and fresh water mussels. Transplant and relay of shellfish from polluted to certified grounds for cleansing enabled the harvesting and marketing of a resource for which public health concerns would otherwise impose resource use limitations. These activities performed by

participating states have resulted in an estimated annual economic contribution of $1.0 million to the concerned shellfish industries. Technical expertise derived from many of these shellfish projects will be of direct benefit to the development of shellfish-oriented aquaculture activities in both the public and private sectors.

Other P.L. 88-309 projects provide aid to commercial fishermen through technical assistance, such as design and testing of more efficient fishing gear and techniques which help increase catch and reduce operating costs. This work, along with marketing efforts to promote consumer acceptance of underutilized species such as squid, cow-nosed ray, and monkfish, are an integral part of the overall fisheries development program in the region. This also permits participating states to coordinate their efforts with the Fishery Development Foundations and other organizations for local, regional, and national programs such as Catch America. Current emphasis on improving seafood quality has helped to create changes in handling practices leading to gradual improvements in the economics of the commercial fisheries industry.

Southeast Region

The 19 states that make up the Southeast Region represent a diversity of fishery habitats and a great potential for the conservation and management of marine and freshwater commercial and anadromous fishery resources for the benefit of the Nation. From the warm tropical reef-laden waters of the Caribbean Sea surrounding Puerto Rico and the U.S. Virgin Islands to the fertile inland reservoirs in Kansas and Nebraska, the great need and potential for the development and application of fishery management programs is being realized by grant-in-aid programs sponsored under PL 88-309 and 89-304. The Southeastern states make a substantial contribution to the Nation's domestic commercial fishery production; the $1.6 million in PL 88-309 funds allocated to the Southeast Region in FY 1982 were expended by the states to support the management of commercial fishery resources valued at $2.5 billion.

The ten coastal states of the Region continued to develop a base of information for management of the many marine fisheries that are present in these states. The data accumulated under PL 88-309 not only supported the management of these species in each state's Territorial Sea, but made a significant contribution to the development of fishery management plans by the Gulf, South Atlantic and Caribbean Fishery Management Councils for management of fisheries in the U.S. Fishery Conservation Zone. The states of the Gulf of Mexico conducted PL 88-309 projects to determine the migratory patterns and life histories of king mackerel, spiny lobster and stone crab. The Gulf states also joined with the National Marine Fisheries Service's Southeast Fisheries Center in a Gulf-wide Southeast Area Monitoring and Assessment Program (SEAMAP). The 1982 focus was on the development of information on the movement and growth of penaeid shrimp to support the management of this valuable fishery throughout the Gulf of Mexico.

The Commonwealth of Puerto Rico and the U.S. Virgin Islands continued to assess the status of reef fisheries in the Caribbean Sea. Spiny lobster, reef fish, and shellfish fisheries were monitored to provide information for their management and conservation by each government and by the Caribbean Fishery Management Council. Both Puerto Rico and the Virgin Islands surveyed their commercial fishing industries to document the weight and value of commercial fishery landings.

The South Atlantic States of North Carolina, South Carolina and Georgia conducted PL 88-309 activities in support of Territorial Sea and Fishery Conservation Zone management programs. South Carolina contributed to this data base by documenting the weight and value of commercial marine fishery resources harvested by commercial fishermen. North Carolina and Georgia continued longterm marine fishery resource monitoring studies to support the management of shrimp, finfish and shellfish.

The inland states of the Southeast Region also aggressively pursued PL 88-309 projects in support of stream and reservoir commercial fisheries management programs. Kansas and New Mexico tested methods of harvesting and management of commercial fisheries. Iowa, Nebraska and Missouri developed methods for monitoring the well-being of the Mississippi and Missouri River commercial fisheries. Oklahoma, Arkansas, Kentucky, Tennessee continued to monitor and assess streams and/or reservoirs for commercial finfish and shellfish fisheries to develop and apply measures for the optimum management of these resources.

The states of Alabama, Georgia, Mississippi, North Carolina and South Carolina participated in the Anadromous Fish Conservation Grant Program (PL 89-304) in 1982. Alabama and Mississippi continued to raise and stock striped bass to restore these fisheries to their historical levels. This program is beginning to show results as striped bass are harvested frequently by Alabama's and Mississippi's recreational fishermen. Populations of adult striped bass are becoming more abundant and the prospect is favorable for reestablishing a self sustaining striped bass fishery in the next few years.

Georgia, North Carolina and South Carolina continue to monitor anadromous fisheries to determine their well-being, harvest, and the factors responsible for the decline of some of these resources. Data accumulated from these projects contribute to the development of intra- and interstate measures for the management and conservation of anadromous resources in the South Atlantic.

Northwest Region:

States in the Northwest Region shared approximately $400,000 of P.L. 88-309 funds and $1.2 million of P.L. 89-304 funds in 1982. Thirty-five percent of the regional P.L. 88-309" allocation supported projects for the fisheries agencies of the inland states (Colorado, Utah, Idaho, Wyoming, Montana, and North and South Dakota). The balance of appropriated funds supported Washington, Oregon, and Tribal projects contributing data for the management of the groundfish, dungeness crab, scallop, pink shrimp and salmon fisheries. In addition to the above, a special apportionment of P.L. 89-304 funds was made available to the Pacific Marine Fisheries Commission for the management and operation of the Regional Mark Processing Center (RMPC). The RMPC maintains a regional data base on marked and coded wire tagged salmon recovered in all West Coast fisheries, and coordinates tagging studies coastwide. Tag recovery data provides a means of evaluating hatchery production, of determining salmonid survival under a variety of natural and artificial conditions, the geographical range of hatchery and wild populations, and their contributions to the fisheries of Alaska, California, Oregon, and Washington.

Coastal state efforts under the P.L. 88-309 program concentrated on regional pink shrimp and groundfish stock assessment studies to collect data needed for developing and monitoring Pacific Fishery Management Council fishery management plans (FMP's). NMFS' Northwest and Alaska Fisheries Center research vessels participated in many of these studies. Washington expanded its pink shrimp data base through sampling the catch at all state landings ports and through a logbook program. Oregon initiated net-mesh studies and population modeling to derive improved estimates of shrimp mortality, yield at age and recruitment. Both states cooperated in the collection of landings statistics and biological data on groundfish resources coastwide and initiated or completed comprehensive status of stock documents on seven of the 15 stocks managed under the 1982 Groundfish Management Plan. These data are also useful to the North Pacific Council and the International Groundfish Committee in U.S.-Canadian negotiations.

On a smaller scale, Washington continued to collect seasonal data on Dungeness crab condition. The opening date of the crab fishery in Washington is based on the results of the findings. Similarly, Oregon initiated stock assessment studies on the weathervane scallop in order to develop preliminary state regulations in response to an unexpected, rapid expansion of the scallop fishery.

The inland states of the Northwest region pursued P.L. 88-309 projects in support of improved management techniques for commercial species in large western reservoirs, conducted stock assessment studies to determine the commercial potential of underutilized native species or responded to specific management crises. South Dakota initiated, and Montana and Wyoming completed the development of a data base for the management of goldeye, buffalo fish, and white sucker populations in mainstem reservoirs. Utah and Colorado studies concentrated on baitfish management and market potential. Idaho initiated epidemiological studies on proliferative kidney disease of rainbow trout, in response to the first reported occurrence of the disease in North America. Idaho produces more than 80 percent of the nation's commercial rainbow trout.

Historically the Pacific Salmon fishery is the largest, most complex and controversial fishery in the Northwest. Problems are caused by dwindling stocks, a highly mobile and overcapitalized commercial fishing fleet, treaty obligations, and the necessary interaction of a myriad of state, Federal, and Tribal management entities. The ocean fishery has been regulated and coordinated under a Pacific Fishery Management Council FMP amendment since 1978. Management of mixed stocks, some of which are more depleted than others, requires continuous monitoring of the catch to meet escapement and allocation goals. As data needs have become more critical, P.L. 89-304 program emphasis has moved sharply away from enhancement techniques and basic research.

In 1982, approximately 80 percent of the Region's P.L. 89-304 funds was applied to coded-wire tagging and related data gathering activities. Millions of smolts were tagged for future identification and assessment of their contribution upon return as adults; samplers were stationed at all major Northwest landings ports to collect statistics and biological data on the 1982 catch; tagged fish were recovered, tags processed and decoded, and the information entered in agency computers. The RMPC compiles the data to produce a variety of reports for all West Coast users. Fifteen western Washington tribes collected and processed landings data from fish tickets for entry into WDF's Auxiliary Fish Catch Record System, a soft data system used for in-season salmon and steelhead trout management, and a Washington Department of Fisheries' hard data information system for the storage of historical data used for between-season management. The bulk of the remainder of P.L. 89-304 funds supported projects to improve Oregon hatchery techniques and for spawning surveys in Oregon coastal streams. The University of Washington completed a three year study of the spawning behavior of native chum salmon at the University Big Beef Creek Fish Research Station.

Southwest Region

From a fisheries management, development, and research perspective the Southwest Region is divided into two distinct areas: the temperate Pacific coast of the continental United States and the tropical western Pacific Ocean.

The fisheries of the Pacific coast are well developed, have been the subject of substantial research, and have a long history of management. The major fisheries extend into the waters of several states as well as into the fisheries conservation zone; therefore, they are interjurisdictional resources and have received attention from the Pacific Regional Fisheries Management Council. The Grant-in-Aid Program in recent years has helped meet the management needs of the fisheries managed under the Magnuson Fisheries Conservation and Management Act in addition to addressing specific problems within individual states.

For example, the main objective of the Southwest Region's Anadromous Fisheries Conservation Act program has been to provide some essential management information on northern California streams for management decisions to be made by the Pacific Council for the Council's salmon management plan. Projects have contributed to determining: (1) the weekly commercial landings by species of the number and pounds of salmon (2) the weekly numbers of sport caught salmon landed, (3) the spawning stock/size recruitment relationship for Klamath basin steelhead and salmon stocks, and (4) the extent of the salmon and steelhead distribution within the Eel River system. The salmon management plan has increased the need for efficient systems of monitoring the commercial and recreational salmon fisheries. Funds provided through the grant program improve the quality of information for management as well as provide basic information on habitat conditions.

Western Pacific fisheries are not well developed, have not been the subject of extensive research, and have not had a long history of management. Generally, these fisheries are characterized by a growth from subsistence to commercial landings, tending towards marketing practices that encourage the landing of high quality fish for direct consumption. The resources present two broad management problems: (1) very diverse fisheries fauna and (2) low abundance in localized areas (overall abundance is unknown). In 1982, funds from the Commercial Fisheries Research and Development Act were mainly directed towards developing local fisheries and to establish basic information collection systems. The development projects have been coordinated with work being done by the Pacific Basin Development Council, the Pacific Tuna Development Foundation, and the Western Pacific Regional Fisheries Management Council. Information collection projects have been coordinated with the Western Pacific Fisheries Information Network which is conducted by the Southwest Fisheries Center's Honolulu Laboratory.

In 1982, two new participants entered the grant program, the Trust Territory of the Pacific Islands and the Commonwealth of the Northern Mariana Islands. Both have instituted much needed data collection projects. Information collected through these projects will be placed in the Western Pacific Fisheries Information Network to be used by the managing agencies, including the Western Pacific Fishery Management Council. The refinement of information collection systems is likely to be a major objective in the Western Pacific for the next decade.

Alaska Region

In FY 1982, the Alaska Region received $548,600 under the Anadromous Fish Conservation Act (P.L. 89-304) and $240,000 under the Commercial Fisheries Research and Development Act (P.L. 89-309). The Region apportioned $518,600 of P.L. 89-304 money to the Alaska Department of Fish and Game (ADF&G) and $30,000 to the University of Washington's Fishery Research Institute for research projects directed at the management of certain segments of Alaska's commercial fisheries. These segments, which include fisheries for sockeye, pink, chum, and coho salmon, and Pacific herring in Southeast Alaska, sockeye salmon in the Alaska Pennisula, groundfish in the Bering Sea and Gulf of Alaska, and Pacific herring in the Bering Sea, had a total 1982 value to the fishermen of about $98 million.

Four of these projects are contributing to the data base required by the Magnuson Fishery Conservation and Management Act (MFCMA) for the development and maintenance of fishery management plans and for inseason management actions authorized by the plans. Two of the P.L. 89-304 projects are directed at tagging coho salmon from Southeast Alaska and the recovery of tags from coho and chinook salmon that were tagged in Alaska, British Columbia, Washington, Oregon, and California. Data thus obtained from these projects are providing better understanding of migration routes, run timing, magnitude of returns, and relative contributions of stocks from these states and British Columbia.

Two P.L. 88-309 projects have been directed at the collection and analysis of U.S. catch and effort data from groundfish fisheries in the Gulf of Alaska and the Bering Sea and from a Pacific herring fishery in the Bering Sea. Data from the fisheries are used to determine U.S. catches and current stock conditions. Inseason management decisions by NMFS and ADF&G are based on these determinations. Data from the groundfish fisheries contribute directly to maintenance of fishery management plans. Data from the herring fishery are contributing to development of a fishery management plan to manage an offshore herring fishery.

ADMINISTRATIVE ORGANIZATIONS

NON FEDERAL COOPERATORS

State	Agency	Address
Alabama	Department of Conservation and Natural Resources	State Administration Building 64 North Union Street Montgomery 36130
	Auburn University, Fisheries Department	Swingle Hall Auburn 36830
American Samoa	Office of Marine Resources Government of American Samoa	Pago Pago 96799
Alaska	Department of Fish & Game	Box 3-200 Juneau 99802
Arizona	Game and Fish Department	2222 West Greenway Phoenix, 85023
Arkansas	Game and Fish Commission	2 Natural Resources Drive Markham & I-430 Little Rock 72205
California	Department of Fish & Game The Resources Agency	1416 Ninth Street Sacramento 95814
Colorado	Division of Wildlife	6060 Broadway Denver 80216
Connecticut	Preservation & Conservation Division, Department of Environmental Protection	State Office Building 165 Capitol Avenue Hartford 06115
Delaware	Division of Fish and Wildlife Department of Natural Resources & Environmental Control	P.O. Box 1401 Dover 19901
Florida	Department of Natural Resources	3900 Commonwealth Boulevard Tallahassee 32303
Georgia	Department of Natural Resources	Trinity-Washington Building 270 Washington Street, SW Atlanta 30334
Guam	Government of Guam	Agana 96921
Hawaii	Division of Fish & Game Department of Land & Natural Resources	1151 Punchbowl Street Honolulu 96813
Idaho	Fish & Game Department	600 South Walnut, Box 25 Boise 83707
Illinois	Department of Conservation	605 Wm. Stratton Building 400 S. Spring Street Springfield 62706
Indiana	Division of Fish & Wildlife Department of Natural Resources	607 State Office Building Indianapolis 46204
Iowa	State Conservation Commission	Wallace State Office Building 9th and Grand Des Moines 50319
Kansas	Fish and Game Commission	Box 54A Rural Route 2 Pratt 67124

Kentucky	Department of Fish & Wildlife Resources	592 East Main Street Frankfort 40601
Louisiana	Department of Wildlife and Fisheries	P.O. Box 15570 Baton Rouge 70895
Maine	Department of Marine Resources	State House, Station 21 Augusta 04333
Northern Mariana Islands	Division of Marine Resources	Office of the Governor Saipan 96950
Maryland	Tidewater Administration Department of Natural Resources	Tawes State Office Building Annapolis 21401
Massachusetts	Division of Marine Fisheries Department of Fisheries, Wildlife, and Recreational Vechicles	Leverett Saltonstall Building 100 Cambridge Street Boston 02202
Michigan	Department of Natural Resources	Box 30028 Lansing 48909
Minnesota	Division of Fish and Wildlife Department of Natural Resources	300 Centennial Building St. Paul 55155
Mississippi	Department of Wildlife Conservation	Box 451 Jackson 39205
Missouri	Department of Conservation	P.O. Box 180 Jefferson City 65101
Montana	Fish and Game Department	1420 E. Sixth Avenue Helena 59601
Nebraska	Game and Parks Commission	Box 30380 2200 North 33rd Street Lincoln 68503
Nevada	Department of Fish and Game	Box 10678 Reno 89520
New Hampshire	Fish and Game Department	34 Bridge Street Concord 03301
New Jersey	Division of Fish, Game & Wildlife, Department of Environmental Protection	CN-400 Trenton 08625
New Mexico	Department of Game and Fish	State Capitol Building Sante Fe 87501
New York	Division of Marine Resources	Building 40, State University of New York Stony Brook 11790
North Carolina	Division of Marine Fisheries Department of Natural Resources and Community Development	Box 769 Morehead City 28557
North Dakota	State Game and Fish Department	2121 Lovett Street Bismarck 58501
Ohio	Division of Wildlife Department of Natural Resources	Fountain Square Columbus 43224
Oklahoma	Department of Wildlife Conservation	1801 North Lincoln Oklahoma City 73105

Oregon	Department of Fish and Wildlife	506 SW Mill Street Portland 97208
	Pacific Salmon Inter-agency Council	741 State Office Building Portland 97201
	Oregon State University	Corvallis 97331
Pennsylvania	Fish Commission	P.O. Box 1673 Harrisburg 17120
Puerto Rico	Marine Resources Development Corporation	P.O. Box 2629 Old San Juan Station
Rhode Island	Division of Fish and Wildlife Department of Environmental Management	Washington County Government Center Tower Hill Road Wakefield 02879
South Carolina	Wildlife and Marine Resources Department	P.O. Box 167 Columbia 29202
South Dakota	Department of Game, Fish and Parks	State Office Building No. 1 Pierre 57501
Tennessee	Wildlife Resources Agency	P.O. Box 40747 Ellington Agricultural Center Nashville 37204
Texas	Parks and Wildlife Department Coastal Fisheries Branch	4200 Smith School Road Austin 78744
Utah	Division of Wildlife Resources State Department of Natural Resources	1596 West North Temple Salt Lake City 84116
Vermont	Fish and Game Department	5 Court Street Montpelier 05602
Virgin Islands	Department of Conservation and Cultural Affairs	P.O. Box 4340 St. Thomas 00801
Virginia	Marine Resources Commission	P.O. Box 756 2401 West Avenue Newport News 23607
	Institute of Marine Science	Gloucester Point 23062
Washington	Department of Fisheries	115 General Administration Building Olympia 98504
	Fisheries Research Institute	University of Washington Seattle 98105
West Virginia	Department of Natural Resources	1800 Washington Street, East Charleston 25305
Wisconsin	Department of Natural Resources	Box 7921 Madison 53707
Wyoming	Game and Fish Department	Box 1589 Cheyenne 82001

Northeast Region

Connecticut
Delaware
Illinois
Indiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
New Hampshire
New Jersey
New York
Ohio
Pennsylvania
Rhode Island
Vermont
Virginia
West Virginia
Wisconsin

Allen E. Peterson, Regional Director
John E. Cookson, Chief, State/Federal Relations Branch
Federal Building
14 Elm Street
Gloucester, Massachusetts 01930
Phone: 617-281-3600

Southeast Region

Alabama
Arkansas
Florida
Georgia
Iowa
Kansas
Kentucky
Louisiana
Mississippi
Missouri
Nebraska
New Mexico
North Carolina
Oklahoma
Puerto Rico
South Carolina
Tennessee
Texas
Virgin Islands

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PUBLICATIONS*

In carrying out project activities about 300 State scientists are continously employed to gather information for better management of the fishery resources and to solve fishery problems. These studies have resulted 673 publications, of which 579 have appeared in scientific journals and 94 have been for partial fulfillment of the requirement for advanced degrees from educational institutions. The literature citations list the project numbers in parentheses.

Some of the reports are available from the National Technical Information Service (NTIS). NTIS sells these reports as either paper or microfiche copies. Its address is:

National Technical Information Service
U.S. Department of Commerce
Springfield, VA 22151

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